Box Seq Listing 1/633

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Gary Ruvkun et al.	Art Unit:	1633
Serial No.:	09/844,353	Examiner:	
Filed:	April 27, 2001	Customer No.:	21559

Title: THERAPEUTIC AND DIAGNOSTIC TOOLS FOR IMPAIRED GLUCOSE TOLERANCE CONDITIONS

Assistant Commissioner For Patents
Washington, D.C. 20231

STATEMENT UNDER 37 C.F.R. § 1.825

In reply to the Notice to Comply mailed June 4, 2001 and as required by 37 C.F.R. § 1.825(a), enclosed is an amended sequence listing consisting of 63 sheets to be inserted at the end of the application.

The amendments correct typographical errors. I hereby submit that the substitute sheets contain no new matter.
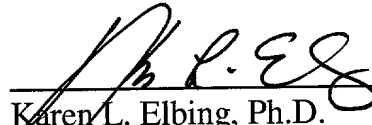
As required by 37 C.F.R. § 1.825(b), enclosed is a diskette containing a copy of the sequence listing in computer readable form including all previously submitted data with the amendments incorporated therein. The contents of the computer readable form are the same as the contents of the paper sheets.

If there are any charges or any credits, please apply them to Deposit Account No.

03-2095.

Respectfully submitted,

Date: _1 August 2001_

Karen L. Elbing, Ph.D.
Reg. No. 35,238

Clark & Elbing LLP
176 Federal Street
Boston, MA 02110
Telephone: 617-428-0200
Facsimile: 617-428-7045

\\Clark-w2k1\documents\00786\351xxx\00786.351005 Sequence Statement for Reply.wpd

RE

SEQUENCE LISTING

<110> Ruvkun, Gary
        Kimura, Koutarou
        Patterson, Garth
        Ogg, Scott
        Paradis, Suzanne
        Tissenbaum, Heidi
        Morris, Jason
        Koweek, Allison

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    IMPAIRED GLUCOSE TOLERANCE CONDITIONS

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<141> 2001-04-27

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Gly Gly Pro Tyr Cys Leu Thr Asn Arg Gly Gly Ser Asn Glu Arg Gly
        1555   1560   1565
Ala Gly Phe Gly Glu Ala Val Arg Leu Thr Asp Gly Val Gly Ser Gly
        1570   1575   1580
His Leu Asn Asp Asp Asp Tyr Val Glu Lys Glu Ile Ser Ser Met Asp
1585   1590   1595   1600
Thr Arg Arg Ser Thr Gly Ala Ser Ser Ser Ser Tyr Gly Val Pro Gln
            1605   1610   1615
Thr Asn Trp Ser Gly Asn Arg Gly Ala Thr Tyr Tyr Thr Ser Lys Ala
        1620   1625   1630
Gln Gln Ala Ala Thr Ala Ala Ala Ala Ala Ala Ala Leu Gln Gln
        1635   1640   1645
Gln Gln Asn Gly Gly Arg Gly Asp Arg Leu Thr Gln Leu Pro Gly Thr
        1650   1655   1660
Gly His Leu Gln Ser Thr Arg Gly Gly Gln Asp Gly Asp Tyr Ile Glu

```
                                   1665                          1670                               1675                              1680
Thr Glu Pro Lys Asn Tyr Arg Asn Asn Gly Ser Pro Ser Arg Asn Gly
                    1685                          1690                          1695
Asn Ser Arg Asp Ile Phe Asn Gly Arg Ser Ala Phe Gly Glu Asn Glu
          1700                          1705                          1710
His Leu Ile Glu Asp Asn Glu His His Pro Leu Val
          1715                          1720


<210> 13
<211> 139
<212> PRT
<213> Caenorhabditis elegans

<400> 13
Thr Ser Gly Ser Gly Met Gly Pro Thr Thr Leu His Lys Leu Thr Ile
 1               5                    10                   15
Gly Gly Gln Ile Arg Leu Thr Gly Arg Val Gly Ser Gly Arg Phe Gly
               20                   25                   30
Asn Val Ser Arg Gly Asp Tyr Arg Gly Glu Ala Val Ala Val Lys Val
               35                   40                   45
Phe Asn Ala Leu Asp Glu Pro Ala Phe His Lys Glu Thr Glu Ile Phe
          50                   55                   60
Glu Thr Arg Met Leu Arg His Pro Asn Val Leu Arg Tyr Ile Gly Ser
65                   70                        75                        80
Asp Arg Val Asp Thr Gly Phe Val Thr Glu Leu Trp Leu Val Thr Glu
               85                   90                        95
Tyr His Pro Ser Gly Ser Leu His Asp Phe Leu Leu Glu Asn Thr Val
               100                       105                       110
Asn Ile Glu Thr Tyr Tyr Asn Leu Met Arg Ser Thr Ala Ser Gly Leu
          115                       120                       125
Ala Phe Leu His Asn Gln Ile Gly Gly Ser Lys
          130                       135


<210> 14
<211> 62
<212> PRT
<213> Caenorhabditis elegans

<400> 14
Glu Asp Ala Ala Ser Asp Ile Ile Ala Asn Glu Asn Tyr Lys Cys Gly
 1               5                    10                        15
Thr Val Arg Tyr Leu Ala Pro Glu Ile Leu Asn Ser Thr Met Gln Phe
               20                   25                   30
Thr Val Phe Glu Ser Tyr Gln Cys Ala Asp Val Tyr Ser Phe Ser Leu
          35                   40                        45
Val Met Trp Glu Thr Leu Cys Arg Cys Glu Asp Gly Asp Val
          50                   55                   60


<210> 15
<211> 31
<212> PRT
<213> Caenorhabditis elegans

<400> 15
Lys Pro Ala Met Ala His Arg Asp Ile Lys Ser Lys Asn Ile Met Val
```

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```
 1                   5                        10                      15
Lys Asn Asp Leu Thr Cys Ala Ile Gly Asp Leu Gly Leu Ser Leu
                20                      25                      30
```


<210> 16
<211> 72
<212> PRT
<213> Caenorhabditis elegans

<400> 16
```
Ile Pro Tyr Ile Glu Trp Thr Asp Arg Asp Pro Gln Asp Ala Gln Met
 1               5                       10                      15
Phe Asp Val Val Cys Thr Arg Arg Leu Arg Pro Thr Glu Asn Pro Leu
                20                      25                      30
Trp Lys Asp His Pro Glu Met Lys His Ile Met Glu Ile Ile Lys Thr
        35                      40                      45
Cys Trp Asn Gly Asn Pro Ser Ala Arg Phe Thr Ser Tyr Ile Cys Arg
        50                      55                      60
Lys Arg Met Asp Glu Arg Gln Gln
65                      70
```


<210> 17
<211> 150
<212> PRT
<213> Caenorhabditis elegans

<400> 17
```
Tyr Phe Glu Ser Val Asp Arg Phe Leu Tyr Ser Cys Val Gly Tyr Ser
 1               5                       10                      15
Val Ala Thr Tyr Ile Met Gly Ile Lys Asp Arg His Ser Asp Asn Leu
                20                      25                      30
Met Leu Thr Glu Asp Gly Lys Tyr Val His Ile Asp Phe Gly His Ile
        35                      40                      45
Leu Gly His Gly Lys Thr Lys Leu Gly Ile Gln Arg Asp Arg Gln Pro
        50                      55                      60
Phe Ile Leu Thr Glu His Phe Met Thr Val Ile Arg Ser Gly Lys Ser
65                      70                      75                      80
Val Asp Gly Asn Ser His Glu Leu Gln Lys Phe Lys Thr Leu Cys Val
                85                      90                      95
Glu Ala Tyr Glu Val Met Trp Asn Asn Arg Asp Leu Phe Val Ser Leu
                100                     105                     110
Phe Thr Leu Met Leu Gly Met Glu Leu Pro Glu Leu Ser Thr Lys Ala
        115                     120                     125
Asp Leu Asp His Leu Lys Lys Thr Leu Phe Cys Asn Gly Glu Ser Lys
        130                     135                     140
Glu Glu Ala Arg Lys Phe
145                     150
```


<210> 18
<211> 113
<212> PRT
<213> Caenorhabditis elegans

<400> 18
```
Ser Pro Leu Asp Pro Val Tyr Lys Leu Gly Glu Met Ile Ile Asp Lys
```

```
        1                   5                      10                    15
Ala Ile Val Leu Gly Ser Ala Lys Arg Pro Leu Met Leu His Trp Lys
            20                      25                      30
Asn Lys Asn Pro Lys Ser Asp Leu His Leu Pro Phe Cys Ala Met Ile
        35                      40                      45
Phe Lys Asn Gly Asp Asp Leu Arg Gln Asp Met Leu Val Leu Gln Val
        50                      55                      60
Leu Glu Val Met Asp Asn Ile Trp Lys Ala Ala Asn Ile Asp Cys Cys
65                      70                      75                      80
Leu Asn Pro Tyr Ala Val Leu Pro Met Gly Glu Met Ile Gly Ile Ile
                85                      90                      95
Glu Val Val Pro Asn Cys Lys Thr Ile Phe Glu Ile Gln Val Gly Thr
            100                     105                     110
Gly
```

<210> 19
<211> 106
<212> PRT
<213> Caenorhabditis elegans

<400> 19
```
Leu Ala Phe Val Trp Thr Asp Arg Glu Asn Phe Ser Glu Leu Tyr Val
    1                   5                      10                    15
Met Leu Glu Lys Trp Lys Pro Pro Ser Val Ala Ala Ala Leu Thr Leu
            20                      25                      30
Leu Gly Lys Arg Cys Thr Asp Arg Val Ile Arg Lys Phe Ala Val Glu
            35                      40                      45
Lys Leu Asn Glu Gln Leu Ser Pro Val Thr Phe His Leu Phe Ile Leu
        50                      55                      60
Pro Leu Ile Gln Ala Leu Lys Tyr Glu Pro Arg Ala Gln Ser Glu Val
65                      70                      75                      80
Gly Met Met Leu Leu Thr Arg Ala Leu Cys Asp Tyr Arg Ile Gly His
                85                      90                      95
Arg Leu Phe Trp Leu Leu Arg Ala Glu Ile
                100                     105
```

<210> 20
<211> 139
<212> PRT
<213> Caenorhabditis elegans

<400> 20
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Glu Tyr Trp Ile Val Thr Glu Phe His Glu Arg Leu Ser Leu Tyr Glu
    1                   5                      10                    15
Leu Leu Lys Asn Asn Val Ile Ser Ile Thr Ser Ala Asn Arg Ile Ile
            20                      25                      30
Met Ser Met Ile Asp Gly Leu Gln Phe Leu His Asp Asp Arg Pro Tyr
            35                      40                      45
Phe Phe Gly His Pro Lys Lys Pro Ile Ile His Arg Asp Ile Lys Ser
        50                      55                      60
Lys Asn Ile Leu Val Lys Ser Asp Met Thr Thr Cys Ile Ala Asp Phe
65                      70                      75                      80
Gly Leu Ala Arg Ile Tyr Ser Tyr Asp Ile Glu Gln Ser Asp Leu Leu
                85                      90                      95
Gly Gln Val Gly Thr Lys Arg Tyr Met Ser Pro Glu Met Leu Glu Gly
```

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```
                100                    105                    110
Ala Thr Glu Phe Thr Pro Thr Ala Phe Lys Ala Met Asp Val Tyr Ser
        115                    120                    125
Met Gly Leu Val Met Trp Glu Val Ile Ser Arg
        130                    135


<210> 21
<211> 61
<212> PRT
<213> Caenorhabditis elegans

<400> 21
Ile Gly Phe Asp Pro Thr Ile Gly Arg Met Arg Asn Tyr Val Val Ser
1                   5                   10                      15
Lys Lys Glu Arg Pro Gln Trp Arg Asp Glu Ile Ile Lys His Glu Tyr
        20                      25                      30
Met Ser Leu Leu Lys Lys Val Thr Glu Glu Met Trp Asp Pro Glu Ala
        35                      40                      45
Cys Ala Arg Ile Thr Ala Gly Cys Ala Phe Ala Arg Val
        50                      55                      60


<210> 22
<211> 20
<212> PRT
<213> Caenorhabditis elegans

<400> 22
Pro Ile Thr Asp Phe Gln Leu Ile Ser Lys Gly Arg Phe Gly Lys Val
1                   5                   10                      15
Phe Lys Ala Gln
            20


<210> 23
<211> 163
<212> PRT
<213> Caenorhabditis elegans

<400> 23
Thr Asp Ser Glu Thr Arg Ser Arg Phe Ser Leu Gly Trp Tyr Asn Asn
1                   5                   10                      15
Pro Asn Arg Ser Pro Gln Thr Ala Glu Val Arg Gly Leu Ile Gly Lys
        20                      25                      30
Gly Val Arg Phe Tyr Leu Leu Ala Gly Glu Val Tyr Val Glu Asn Leu
        35                      40                      45
Cys Asn Ile Pro Val Phe Val Gln Ser Ile Gly Ala Asn Met Lys Asn
        50                      55                      60
Gly Phe Gln Leu Asn Thr Val Ser Lys Leu Pro Pro Thr Gly Thr Met
65                      70                      75                      80
Lys Val Phe Asp Met Arg Leu Phe Ser Lys Gln Leu Arg Thr Ala Ala
                85                      90                      95
Glu Lys Thr Tyr Gln Asp Val Tyr Cys Leu Ser Arg Met Cys Thr Val
            100                     105                     110
Arg Val Ser Phe Cys Lys Gly Trp Gly Glu His Tyr Arg Arg Ser Thr
        115                     120                     125
Val Leu Arg Ser Pro Val Trp Phe Gln Ala His Leu Asn Asn Pro Met
```

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```
      130                   135                   140
His Trp Val Asp Ser Val Leu Thr Cys Met Gly Ala Pro Pro Arg Ile
145                   150                   155                   160
Cys Ser Ser


<210> 24
<211> 44
<212> PRT
<213> Caenorhabditis elegans

<400> 24
Arg Ala Phe Arg Phe Pro Val Ile Arg Tyr Glu Ser Gln Val Lys Ser
 1               5                  10                  15
Ile Leu Thr Cys Arg His Ala Phe Asn Ser His Ser Arg Asn Val Cys
            20                  25                  30
Leu Asn Pro Tyr His Tyr Arg Trp Val Glu Leu Pro
        35                  40


<210> 25
<211> 38
<212> PRT
<213> Caenorhabditis elegans

<400> 25
Val Glu Tyr Glu Glu Ser Pro Ser Trp Leu Lys Leu Ile Tyr Tyr Glu
 1               5                  10                  15
Glu Gly Thr Met Ile Gly Glu Lys Ala Asp Val Glu Gly His His Cys
            20                  25                  30
Leu Ile Asp Gly Phe Thr
        35


<210> 26
<211> 60
<212> PRT
<213> Caenorhabditis elegans

<400> 26
Asn Leu Ala Glu Thr Gly His Ser Lys Ile Met Arg Ala Ala His Lys
 1               5                  10                  15
Val Ser Asn Pro Glu Ile Gly Tyr Cys Cys His Pro Thr Glu Tyr Asp
            20                  25                  30
Tyr Ile Lys Leu Ile Tyr Val Asn Arg Asp Gly Arg Val Ser Ile Ala
        35                  40                  45
Asn Val Asn Gly Met Ile Ala Lys Lys Cys Gly Cys
    50                  55                  60


<210> 27
<211> 20
<212> PRT
<213> Caenorhabditis elegans

<400> 27
Asp Trp Ile Val Ala Pro Pro Arg Tyr Asn Ala Tyr Met Cys Arg Gly
```

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```
 1                    5              10                        15
Asp Cys His Tyr
                20


<210> 28
<211> 43
<212> PRT
<213> Caenorhabditis elegans

<400> 28
Val Cys Asn Ala Glu Ala Gln Ser Lys Gly Cys Cys Leu Tyr Asp Leu
 1               5                  10                      15
Glu Ile Glu Phe Glu Lys Ile Gly Trp Asp Trp Ile Val Ala Pro Pro
            20                  25                      30
Arg Tyr Asn Ala Tyr Met Cys Arg Gly Asp Cys
        35                  40


<210> 29
<211> 70
<212> PRT
<213> Caenorhabditis elegans

<400> 29
Asp Cys His Tyr Asn Ala His His Phe Asn Leu Ala Glu Thr Gly His
 1               5                  10                      15
Ser Lys Ile Met Arg Ala Ala His Lys Val Ser Asn Pro Glu Ile Gly
            20                  25                      30
Tyr Cys Cys His Pro Thr Glu Tyr Asp Tyr Ile Lys Leu Ile Tyr Val
        35                  40                      45
Asn Arg Asp Gly Arg Val Ser Ile Ala Asn Val Asn Gly Met Ile Ala
        50                  55                      60
Lys Lys Cys Gly Cys Ser
65                  70


<210> 30
<211> 35
<212> PRT
<213> Caenorhabditis elegans

<400> 30
Cys Cys Leu Tyr Asp Leu Glu Ile Glu Phe Glu Lys Ile Gly Trp Asp
 1               5                  10                      15
Trp Ile Val Ala Pro Pro Arg Tyr Asn Ala Tyr Met Cys Arg Gly Asp
            20                  25                      30
Cys His Tyr
        35


<210> 31
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Degenerate probe
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<221> misc_feature
<222> (1)...(23)
<223> n = A,T,C or G

<400> 31
ggntgggayt rnrtnrtngc ncc   23

<210> 32
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Degenerate probe

<221> misc_feature
<222> (1)...(18)
<223> n = A,T,C or G

<400> 32
tgytgynnnc nacngar   18

<210> 33
<211> 127
<212> PRT
<213> Caenorhabditis elegans

<400> 33
Lys Phe His Glu Trp Ala Ala Gln Ile Cys Asp Gly Met Ala Tyr Leu
1   5   10   15
Glu Ser Leu Lys Phe Cys His Arg Asp Leu Ala Ala Arg Asn Cys Met
            20   25   30
Ile Asn Arg Asp Glu Thr Val Lys Ile Gly Asp Phe Gly Met Ala Arg
            35   40   45
Asp Leu Phe Tyr His Asp Tyr Tyr Lys Pro Ser Gly Lys Arg Met Met
        50   55   60
Pro Val Arg Trp Met Ser Pro Glu Ser Leu Lys Asp Gly Lys Phe Asp
65   70   75   80
Ser Lys Ser Asp Val Trp Ser Phe Gly Val Val Leu Tyr Glu Met Val
                85   90   95
Thr Leu Gly Ala Gln Pro Tyr Ile Gly Leu Ser Asn Asp Glu Val Leu
            100   105   110
Asn Tyr Ile Gly Met Ala Arg Lys Val Ile Lys Lys Pro Glu Cys
            115   120   125

<210> 34
<211> 131
<212> PRT
<213> Caenorhabditis elegans

<400> 34
Asn Thr Thr Cys Gln Lys Ser Cys Ala Tyr Asp Arg Leu Leu Pro Thr
1   5   10   15
Lys Glu Ile Gly Pro Gly Cys Asp Ala Asn Gly Asp Arg Cys His Asp
            20   25   30
Gln Cys Val Gly Gly Cys Glu Arg Val Asn Asp Ala Thr Ala Cys His
            35   40   45

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Ala Cys Lys Asn Val Tyr His Lys Gly Lys Cys Ile Glu Lys Cys Asp
    50                      55                  60
Ala His Leu Tyr Leu Leu Leu Gln Arg Arg Cys Val Thr Arg Glu Gln
65                      70                  75                  80
Cys Leu Gln Leu Asn Pro Val Leu Ser Asn Lys Thr Val Pro Ile Lys
                85                  90                  95
Ala Thr Ala Gly Leu Cys Ser Asp Lys Cys Pro Asp Gly Tyr Gln Ile
            100                 105                 110
Asn Pro Asp Asp His Arg Glu Cys Arg Lys Cys Val Gly Lys Cys Glu
            115                 120                 125
Ile Val Cys
        130


<210> 35
<211> 103
<212> PRT
<213> Caenorhabditis elegans

<400> 35
Phe Asp Gln Lys Ala Cys Glu Ser Leu Val Lys Lys Leu Lys Asp Lys
    1               5                   10                  15
Lys Asn Asp Leu Gln Asn Leu Ile Asp Val Val Leu Ser Lys Gly Thr
            20                  25                  30
Lys Tyr Thr Gly Cys Ile Thr Ile Pro Arg Thr Leu Asp Gly Arg Leu
        35                  40                  45
Gln Val His Gly Arg Lys Gly Phe Pro His Val Val Tyr Gly Lys Leu
        50                  55                  60
Trp Arg Phe Asn Glu Met Thr Lys Asn Glu Thr Arg His Val Asp His
65                  70                  75                  80
Cys Lys His Ala Phe Glu Met Lys Ser Asp Met Val Cys Val Asn Pro
                85                  90                  95
Tyr His Tyr Glu Ile Val Ile
            100


<210> 36
<211> 79
<212> PRT
<213> Caenorhabditis elegans

<400> 36
Asn Arg Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro Val
    1               5                   10                  15
Ala Phe Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser Tyr
            20                  25                  30
Lys Lys Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro Val
            35                  40                  45
Phe Val Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys Lys
        50                  55                  60
Asp Lys Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe
65                  70                  75


<210> 37
<211> 106
<212> PRT
<213> Caenorhabditis elegans
```

<400> 37
Lys Lys Thr Thr Thr Arg Arg Asn Ala Trp Gly Asn Met Ser Tyr Ala
1   5   10   15
Glu Leu Ile Thr Thr Ala Ile Met Ala Ser Pro Glu Lys Arg Leu Thr
            20   25   30
Leu Ala Gln Val Tyr Glu Trp Met Val Gln Asn Val Pro Tyr Phe Arg
        35   40   45
Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly Trp Lys Asn Ser Ile Arg
    50   55   60
His Asn Leu Ser Leu His Ser Arg Phe Met Arg Ile Gln Asn Glu Gly
65   70   75   80
Ala Gly Lys Ser Ser Trp Trp Val Ile Asn Pro Asp Ala Lys Pro Gly
            85   90   95
Met Asn Pro Arg Arg Thr Arg Glu Arg Ser
            100   105

<210> 38
<211> 60
<212> PRT
<213> Caenorhabditis elegans

<400> 38
Glu Ile Lys Leu Ser Asp Phe Lys His Gln Leu Phe Glu Leu Ile Ala
1   5   10   15
Pro Met Lys Trp Gly Thr Tyr Ser Val Lys Pro Gln Asp Tyr Val Phe
            20   25   30
Arg Gln Leu Asn Asn Phe Gly Glu Ile Glu Val Ile Phe Asn Asp Asp
        35   40   45
Gln Pro Leu Ser Lys Leu Glu Leu His Gly Thr Phe
    50   55   60

<210> 39
<211> 2784
<212> DNA
<213> Caenorhabditis elegans

<400> 39
atgaagctaa tagcaacttc tcttctagtt cccgacgagc acacaccgat gatgtcacca 60
gtgaatacaa ctacaaagat tctacaacgg agtggtatta aaatggaaat cccgccatat 120
ttggatccag acagtcagga tgatgacccg gaagatggtg tcaactaccc ggatccagat 180
ttatttgaca caaaaaacac aaatatgacc gagtacgatt ggatgtgtt gaagcttgga 240
aaaccagcag tagatgaagc acggaaaaag atcgaagttc ccgacgctag tgcgccgcca 300
aacaaaattg tagaatattt gatgtattat agaacgttaa aagaaagtga actcatacaa 360
ctgaatgcgt atcggacaaa acgaaatcga ttatcgttga acttggtcaa aaacaatatt 420
gatcgagagt cgaccaaaa agcttgcgag tccctggtga aaaaattgaa ggataagaag 480
aatgatctcc agaacctgat tgatgtggtt ctttcaaaag gtacaaaata taccggttgc 540
attacaattc caaggacact tgatggccgg ttacaggtcc acggaagaaa aggtttccct 600
cacgtagtct atggcaaact gtggaggttt aatgaaatga caaaaaacga aacgcgtcat 660
gtggaccact gcaagcacgc atttgaaatg aaaagtgaca tggtatgcgt gaatccctat 720
cactacgaaa ttgtcattgg aactatgatt gttgggcaga gggatcatga caatcgagat 780
atgccgccgc cacatcaacg ctaccacact ccaggtcggc aggatccagt tgacgatatg 840
agtagattta taccaccagc ttccattcgt ccgcctccga tgaacatgca cacaaggcct 900
cagcctatgc ctcaacaatt gccttcagtt ggcgcaacgt ttgcccatcc tctcccacat 960
caggcgccac ataacccagg ggtttcacat ccgtactcca ttgctccaca gacccattac 1020
ccgttgaaca tgaacccaat tccgcaaatg ccgcaaatgc cacaaatgcc accacctctc 1080
catcagggat atggaatgaa tgggccgagt tgctcttcag aaaacaacaa tccattccac 1140

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caaaatcacc attataatga tattagccat ccaaatcact attcctacga ctgtggtccg 1200
aacttgtacg ggtttccaac tccttatccg gattttcacc atcctttcaa tcagcaacca 1260
caccagccgc cacaactatc acaaaaccat acgtcccaac aaggcagtca tcaaccaggg 1320
caccaaggtc aggtaccgaa tgatccacca atttcaagac cagtgttaca accatcaaca 1380
gtcaccttgg acgtgttccg tcggtactgt agacagacat ttggaaatcg atttttttgaa 1440
ggagaaagtg aacaatccgg cgcaataatt cggtctagta acaaattcat tgaagaattt 1500
gattcgccga tttgtggtgt gacagttgtt cgaccgcgga tgacagacgg tgaggttttg 1560
gagaacatca tgccggaaga tgcaccatat catgacattt gcaagttcat tttgaggctc 1620
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tggggaacaa ttgtgtacta tgagaaaaat ttgcaaattg gcgagaaaaa atgttcgaga 1740
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gagccaaatc caattagaga accagtggcg tttaaagttc gtaaagcaat agtggatgga 1860
attcgctttt cctacaaaaa agacgggagt gtttggcttc aaaaccgcat gaagtacccg 1920
gtatttgtca cttctgggta tctcgacgag caatcaggag gcctaaagaa ggataaagtg 1980
cacaaagttt acggatgtgc gtctatcaaa acgtttggct tcaacgtttc caaacaaatc 2040
atcagagacg cgcttctttc caagcaaatg gcaacaatgt acttgcaagg aaaattgact 2100
ccgatgaatt atatctacga gaagaagact caggaagagc tgcgaaggga agcaacacgc 2160
accactgatt cattggccaa gtactgttgt gtccgtgtct cgttctgcaa aggatttgga 2220
gaagcatacc cagaacgccc gtcaattcat gattgtccag tttggattga gttgaaaatc 2280
aacattgcct acgatttcat ggattcaatc tgccagtaca taaccaactg cttcgagccg 2340
ctaggaatgg aagattttgc aaaattggga atcaacgtca gtgatgacta aatgataact 2400
ttttcactc accctactag atactgattt agtcttattc caaatcatcc aacgatatca 2460
aacttttcc tttgaacttt gcatactatg ttatcacaag ttccaagcag tttcaataca 2520
aacataggat atgttaacaa cttttgataa gaatcaagtt accaactgtt cattgtgagc 2580
tttgagctgt atagaaggac aatgtatccc atacctcaat ctttaatagt catcagtcac 2640
tggtcccgca ccaattttt cgattcgcat atgtcatata ttgcaccgtg gccctttta 2700
ttgtaacttt taatatattt tcttcccaac ttgtgaatat gattgatgaa ccaccatttt 2760
gagtaataaa tgtatttttt gtgg                                     2784
```

<210> 40
<211> 796
<212> PRT
<213> Caenorhabditis elegans

<400> 40

```
Met Lys Leu Ile Ala Thr Ser Leu Leu Val Pro Asp Glu His Thr Pro
1               5                   10                  15
Met Met Ser Pro Val Asn Thr Thr Thr Lys Ile Leu Gln Arg Ser Gly
            20                  25                  30
Ile Lys Met Glu Ile Pro Pro Tyr Leu Asp Pro Asp Ser Gln Asp Asp
        35                  40                  45
Asp Pro Glu Asp Gly Val Asn Tyr Pro Asp Pro Asp Leu Phe Asp Thr
    50                  55                  60
Lys Asn Thr Asn Met Thr Glu Tyr Asp Leu Asp Val Leu Lys Leu Gly
65                  70                  75                  80
Lys Pro Ala Val Asp Glu Ala Arg Lys Lys Ile Glu Val Pro Asp Ala
            85                  90                  95
Ser Ala Pro Pro Asn Lys Ile Val Glu Tyr Leu Met Tyr Tyr Arg Thr
            100                 105                 110
Leu Lys Glu Ser Glu Leu Ile Gln Leu Asn Ala Tyr Arg Thr Lys Arg
        115                 120                 125
Asn Arg Leu Ser Leu Asn Leu Val Lys Asn Asn Ile Asp Arg Glu Phe
        130                 135                 140
Asp Gln Lys Ala Cys Glu Ser Leu Val Lys Lys Leu Lys Asp Lys Lys
145                 150                 155                 160
Asn Asp Leu Gln Asn Leu Ile Asp Val Val Leu Ser Lys Gly Thr Lys
                165                 170                 175
Tyr Thr Gly Cys Ile Thr Ile Pro Arg Thr Leu Asp Gly Arg Leu Gln
```

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```
                180                     185                     190
Val His Gly Arg Lys Gly Phe Pro His Val Val Tyr Gly Lys Leu Trp
        195                     200                     205
Arg Phe Asn Glu Met Thr Lys Asn Glu Thr Arg His Val Asp His Cys
    210                     215                     220
Lys His Ala Phe Glu Met Lys Ser Asp Met Val Cys Val Asn Pro Tyr
225                     230                     235                     240
His Tyr Glu Ile Val Ile Gly Thr Met Ile Val Gly Gln Arg Asp His
                245                     250                     255
Asp Asn Arg Asp Met Pro Pro Pro His Gln Arg Tyr His Thr Pro Gly
                260                     265                     270
Arg Gln Asp Pro Val Asp Asp Met Ser Arg Phe Ile Pro Pro Ala Ser
        275                     280                     285
Ile Arg Pro Pro Pro Met Asn Met His Thr Arg Pro Gln Pro Met Pro
    290                     295                     300
Gln Gln Leu Pro Ser Val Gly Ala Thr Phe Ala His Pro Leu Pro His
305                     310                     315                     320
Gln Ala Pro His Asn Pro Gly Val Ser His Pro Tyr Ser Ile Ala Pro
                325                     330                     335
Gln Thr His Tyr Pro Leu Asn Met Asn Pro Ile Pro Gln Met Pro Gln
                340                     345                     350
Met Pro Gln Met Pro Pro Pro Leu His Gln Gly Tyr Gly Met Asn Gly
        355                     360                     365
Pro Ser Cys Ser Ser Glu Asn Asn Asn Pro Phe His Gln Asn His His
    370                     375                     380
Tyr Asn Asp Ile Ser His Pro Asn His Tyr Ser Tyr Asp Cys Gly Pro
385                     390                     395                     400
Asn Leu Tyr Gly Phe Pro Thr Pro Tyr Pro Asp Phe His His Pro Phe
                405                     410                     415
Asn Gln Gln Pro His Gln Pro Pro Gln Leu Ser Gln Asn His Thr Ser
        420                     425                     430
Gln Gln Gly Ser His Gln Pro Gly His Gln Gly Gln Val Pro Asn Asp
        435                     440                     445
Pro Pro Ile Ser Arg Pro Val Leu Gln Pro Ser Thr Val Thr Leu Asp
    450                     455                     460
Val Phe Arg Arg Tyr Cys Arg Gln Thr Phe Gly Asn Arg Phe Phe Glu
465                     470                     475                     480
Gly Glu Ser Glu Gln Ser Gly Ala Ile Ile Arg Ser Ser Asn Lys Phe
                485                     490                     495
Ile Glu Glu Phe Asp Ser Pro Ile Cys Gly Val Thr Val Val Arg Pro
        500                     505                     510
Arg Met Thr Asp Gly Glu Val Leu Glu Asn Ile Met Pro Glu Asp Ala
        515                     520                     525
Pro Tyr His Asp Ile Cys Lys Phe Ile Leu Arg Leu Thr Ser Glu Ser
    530                     535                     540
Val Thr Phe Ser Gly Glu Gly Pro Glu Val Ser Asp Leu Asn Glu Lys
545                     550                     555                     560
Trp Gly Thr Ile Val Tyr Tyr Glu Lys Asn Leu Gln Ile Gly Glu Lys
                565                     570                     575
Lys Cys Ser Arg Gly Asn Phe His Val Asp Gly Gly Phe Ile Cys Ser
                580                     585                     590
Glu Asn Arg Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro
        595                     600                     605
Val Ala Phe Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser
    610                     615                     620
Tyr Lys Lys Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro
625                     630                     635                     640
Val Phe Val Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys
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-19-

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                    645                     650                     655
Lys Asp Lys Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe
            660                     665                     670
Gly Phe Asn Val Ser Lys Gln Ile Ile Arg Asp Ala Leu Leu Ser Lys
            675                     680                     685
Gln Met Ala Thr Met Tyr Leu Gln Gly Lys Leu Thr Pro Met Asn Tyr
            690                     695                     700
Ile Tyr Glu Lys Lys Thr Gln Glu Glu Leu Arg Arg Glu Ala Thr Arg
705                     710                     715                     720
Thr Thr Asp Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys
                725                     730                     735
Lys Gly Phe Gly Glu Ala Tyr Pro Glu Arg Pro Ser Ile His Asp Cys
            740                     745                     750
Pro Val Trp Ile Glu Leu Lys Ile Asn Ile Ala Tyr Asp Phe Met Asp
            755                     760                     765
Ser Ile Cys Gln Tyr Ile Thr Asn Cys Phe Glu Pro Leu Gly Met Glu
            770                     775                     780
Asp Phe Ala Lys Leu Gly Ile Asn Val Ser Asp Asp
785                     790                     795


<210> 41
<211> 858
<212> PRT
<213> Caenorhabditis elegans

<400> 41
Met Gly Asp His His Asn Leu Thr Gly Leu Pro Gly Thr Ser Ile Pro
 1               5                   10                  15
Pro Gln Phe Asn Tyr Ser Gln Pro Gly Thr Ser Thr Gly Gly Pro Leu
            20                  25                  30
Tyr Gly Gly Lys Pro Ser His Gly Leu Glu Asp Ile Pro Asp Val Glu
        35                  40                  45
Glu Tyr Glu Arg Asn Leu Leu Gly Ala Gly Ala Gly Phe Asn Leu Leu
    50                  55                  60
Asn Val Gly Asn Met Ala Asn Val Pro Asp Glu His Thr Pro Met Met
65                  70                  75                  80
Ser Pro Val Asn Thr Thr Thr Lys Ile Leu Gln Arg Ser Gly Ile Lys
                85                  90                  95
Met Glu Ile Pro Pro Tyr Leu Asp Pro Asp Ser Gln Asp Asp Asp Pro
            100                 105                 110
Glu Asp Gly Val Asn Tyr Pro Asp Pro Asp Leu Phe Asp Thr Lys Asn
        115                 120                 125
Thr Asn Met Thr Glu Tyr Asp Leu Asp Val Leu Lys Leu Gly Lys Pro
    130                 135                 140
Ala Val Asp Glu Ala Arg Lys Lys Ile Glu Val Pro Asp Ala Ser Ala
145                 150                 155                 160
Pro Pro Asn Lys Ile Val Glu Tyr Leu Met Tyr Tyr Arg Thr Leu Lys
                165                 170                 175
Glu Ser Glu Leu Ile Gln Leu Asn Ala Tyr Arg Thr Lys Arg Asn Arg
            180                 185                 190
Leu Ser Leu Asn Leu Val Lys Asn Asn Ile Asp Arg Glu Phe Asp Gln
            195                 200                 205
Lys Ala Cys Glu Ser Leu Val Lys Lys Leu Lys Asp Lys Lys Asn Asp
    210                 215                 220
Leu Gln Asn Leu Ile Asp Val Val Leu Ser Lys Gly Thr Lys Tyr Thr
225                 230                 235                 240
Gly Cys Ile Thr Ile Pro Arg Thr Leu Asp Gly Arg Leu Gln Val His
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-20-

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                    245                     250                     255
Gly Arg Lys Gly Phe Pro His Val Val Tyr Gly Lys Leu Trp Arg Phe
            260                     265                     270
Asn Glu Met Thr Lys Asn Glu Thr Arg His Val Asp His Cys Lys His
        275                     280                     285
Ala Phe Glu Met Lys Ser Asp Met Val Cys Val Asn Pro Tyr His Tyr
        290                     295                     300
Glu Ile Val Ile Gly Thr Met Ile Val Gly Gln Arg Asp His Asp Asn
305                     310                     315                     320
Arg Asp Met Pro Pro Pro His Gln Arg Tyr His Thr Pro Gly Arg Gln
                325                     330                     335
Asp Pro Val Asp Asp Met Ser Arg Phe Ile Pro Pro Ala Ser Ile Arg
            340                     345                     350
Pro Pro Pro Met Asn Met His Thr Arg Pro Gln Pro Met Pro Gln Gln
        355                     360                     365
Leu Pro Ser Val Gly Ala Thr Phe Ala His Pro Leu Pro His Gln Ala
        370                     375                     380
Pro His Asn Pro Gly Val Ser His Pro Tyr Ser Ile Ala Pro Gln Thr
385                     390                     395                     400
His Tyr Pro Leu Asn Met Asn Pro Ile Pro Gln Met Pro Gln Met Pro
                405                     410                     415
Gln Met Pro Pro Pro Leu His Gln Gly Tyr Gly Met Asn Gly Pro Ser
            420                     425                     430
Cys Ser Ser Glu Asn Asn Asn Pro Phe His Gln Asn His His Tyr Asn
        435                     440                     445
Asp Ile Ser His Pro Asn His Tyr Ser Tyr Asp Cys Gly Pro Asn Leu
        450                     455                     460
Tyr Gly Phe Pro Thr Pro Tyr Pro Asp Phe His His Pro Phe Asn Gln
465                     470                     475                     480
Gln Pro His Gln Pro Pro Gln Leu Ser Gln Asn His Thr Ser Gln Gln
            485                     490                     495
Gly Ser His Gln Pro Gly His Gln Gly Gln Val Pro Asn Asp Pro Pro
            500                     505                     510
Ile Ser Arg Pro Val Leu Gln Pro Ser Thr Val Thr Leu Asp Val Phe
        515                     520                     525
Arg Arg Tyr Cys Arg Gln Thr Phe Gly Asn Arg Phe Phe Glu Gly Glu
        530                     535                     540
Ser Glu Gln Ser Gly Ala Ile Ile Arg Ser Ser Asn Lys Phe Ile Glu
545                     550                     555                     560
Glu Phe Asp Ser Pro Ile Cys Gly Val Thr Val Val Arg Pro Arg Met
            565                     570                     575
Thr Asp Gly Glu Val Leu Glu Asn Ile Met Pro Glu Asp Ala Pro Tyr
            580                     585                     590
His Asp Ile Cys Lys Phe Ile Leu Arg Leu Thr Ser Glu Ser Val Thr
        595                     600                     605
Phe Ser Gly Glu Gly Pro Glu Val Ser Asp Leu Asn Glu Lys Trp Gly
        610                     615                     620
Thr Ile Val Tyr Tyr Glu Lys Asn Leu Gln Ile Gly Glu Lys Lys Cys
625                     630                     635                     640
Ser Arg Gly Asn Phe His Val Asp Gly Gly Phe Ile Cys Ser Glu Asn
                645                     650                     655
Arg Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro Val Ala
            660                     665                     670
Phe Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser Tyr Lys
        675                     680                     685
Lys Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro Val Phe
        690                     695                     700
Val Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys Lys Asp
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705                   710                   715                   720
Lys Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe Gly Phe
                725                   730                   735
Asn Val Ser Lys Gln Ile Ile Arg Asp Ala Leu Leu Ser Lys Gln Met
            740                   745                   750
Ala Thr Met Tyr Leu Gln Gly Lys Leu Thr Pro Met Asn Tyr Ile Tyr
        755                   760                   765
Glu Lys Lys Thr Gln Glu Glu Leu Arg Arg Glu Ala Thr Arg Thr Thr
    770                   775                   780
Asp Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys Lys Gly
785                   790                   795                   800
Phe Gly Glu Ala Tyr Pro Glu Arg Pro Ser Ile His Asp Cys Pro Val
                805                   810                   815
Trp Ile Glu Leu Lys Ile Asn Ile Ala Tyr Asp Phe Met Asp Ser Ile
            820                   825                   830
Cys Gln Tyr Ile Thr Asn Cys Phe Glu Pro Leu Gly Met Glu Asp Phe
        835                   840                   845
Ala Lys Leu Gly Ile Asn Val Ser Asp Asp
    850                   855


<210> 42
<211> 892
<212> PRT
<213> Caenorhabditis elegans

<400> 42
Met Gly Asp His His Asn Leu Thr Gly Leu Pro Gly Thr Ser Ile Pro
1                   5                   10                  15
Pro Gln Phe Asn Tyr Ser Gln Pro Gly Thr Ser Thr Gly Gly Pro Leu
            20                  25                  30
Tyr Gly Gly Lys Pro Ser His Gly Leu Glu Asp Ile Pro Asp Val Glu
        35                  40                  45
Glu Tyr Glu Arg Asn Leu Leu Gly Ala Gly Ala Gly Phe Asn Leu Leu
    50                  55                  60
Asn Val Gly Asn Met Ala Asn Glu Phe Lys Pro Ile Ile Thr Leu Asp
65                  70                  75                  80
Thr Lys Pro Pro Arg Asp Ala Asn Lys Ser Leu Ala Phe Asn Gly Gly
                85                  90                  95
Leu Lys Leu Ile Thr Pro Lys Thr Glu Val Pro Asp Glu His Thr Pro
            100                 105                 110
Met Met Ser Pro Val Asn Thr Thr Thr Lys Ile Leu Gln Arg Ser Gly
        115                 120                 125
Ile Lys Met Glu Ile Pro Pro Tyr Leu Asp Pro Asp Ser Gln Asp Asp
    130                 135                 140
Asp Pro Glu Asp Gly Val Asn Tyr Pro Asp Pro Asp Leu Phe Asp Thr
145                 150                 155                 160
Lys Asn Thr Asn Met Thr Glu Tyr Asp Leu Asp Val Leu Lys Leu Gly
                165                 170                 175
Lys Pro Ala Val Asp Glu Ala Arg Lys Lys Ile Glu Val Pro Asp Ala
            180                 185                 190
Ser Ala Pro Pro Asn Lys Ile Val Glu Tyr Leu Met Tyr Tyr Arg Thr
        195                 200                 205
Leu Lys Glu Ser Glu Leu Ile Gln Leu Asn Ala Tyr Arg Thr Lys Arg
    210                 215                 220
Asn Arg Leu Ser Leu Asn Leu Val Lys Asn Asn Ile Asp Arg Glu Phe
225                 230                 235                 240
Asp Gln Lys Ala Cys Glu Ser Leu Val Lys Lys Leu Lys Asp Lys Lys
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                        245                   250                   255
Asn Asp Leu Gln Asn Leu Ile Asp Val Val Leu Ser Lys Gly Thr Lys
            260                   265                   270
Tyr Thr Gly Cys Ile Thr Ile Pro Arg Thr Leu Asp Gly Arg Leu Gln
        275                   280                   285
Val His Gly Arg Lys Gly Phe Pro His Val Val Tyr Gly Lys Leu Trp
        290                   295                   300
Arg Phe Asn Glu Met Thr Lys Asn Glu Thr Arg His Val Asp His Cys
305                   310                   315                   320
Lys His Ala Phe Glu Met Lys Ser Asp Met Val Cys Val Asn Pro Tyr
                325                   330                   335
His Tyr Glu Ile Val Ile Gly Thr Met Ile Val Gly Gln Arg Asp His
            340                   345                   350
Asp Asn Arg Asp Met Pro Pro Pro His Gln Arg Tyr His Thr Pro Gly
        355                   360                   365
Arg Gln Asp Pro Val Asp Asp Met Ser Arg Phe Ile Pro Pro Ala Ser
        370                   375                   380
Ile Arg Pro Pro Pro Met Asn Met His Thr Arg Pro Gln Pro Met Pro
385                   390                   395                   400
Gln Gln Leu Pro Ser Val Gly Ala Thr Phe Ala His Pro Leu Pro His
            405                   410                   415
Gln Ala Pro His Asn Pro Gly Val Ser His Pro Tyr Ser Ile Ala Pro
        420                   425                   430
Gln Thr His Tyr Pro Leu Asn Met Asn Pro Ile Pro Gln Met Pro Gln
        435                   440                   445
Met Pro Gln Met Pro Pro Pro Leu His Gln Gly Tyr Gly Met Asn Gly
    450                   455                   460
Pro Ser Cys Ser Ser Glu Asn Asn Asn Pro Phe His Gln Asn His His
465                   470                   475                   480
Tyr Asn Asp Ile Ser His Pro Asn His Tyr Ser Tyr Asp Cys Gly Pro
                485                   490                   495
Asn Leu Tyr Gly Phe Pro Thr Pro Tyr Pro Asp Phe His His Pro Phe
            500                   505                   510
Asn Gln Gln Pro His Gln Pro Pro Gln Leu Ser Gln Asn His Thr Ser
        515                   520                   525
Gln Gln Gly Ser His Gln Pro Gly His Gln Gly Gln Val Pro Asn Asp
        530                   535                   540
Pro Pro Ile Ser Arg Pro Val Leu Gln Pro Ser Thr Val Thr Leu Asp
545                   550                   555                   560
Val Phe Arg Arg Tyr Cys Arg Gln Thr Phe Gly Asn Arg Phe Phe Glu
                565                   570                   575
Gly Glu Ser Glu Gln Ser Gly Ala Ile Ile Arg Ser Ser Asn Lys Phe
            580                   585                   590
Ile Glu Glu Phe Asp Ser Pro Ile Cys Gly Val Thr Val Val Arg Pro
        595                   600                   605
Arg Met Thr Asp Gly Glu Val Leu Glu Asn Ile Met Pro Glu Asp Ala
        610                   615                   620
Pro Tyr His Asp Ile Cys Lys Phe Ile Leu Arg Leu Thr Ser Glu Ser
625                   630                   635                   640
Val Thr Phe Ser Gly Glu Gly Pro Glu Val Ser Asp Leu Asn Glu Lys
                645                   650                   655
Trp Gly Thr Ile Val Tyr Tyr Glu Lys Asn Leu Gln Ile Gly Glu Lys
            660                   665                   670
Lys Cys Ser Arg Gly Asn Phe His Val Asp Gly Gly Phe Ile Cys Ser
        675                   680                   685
Glu Asn Arg Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro
        690                   695                   700
Val Ala Phe Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser
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Tyr Lys Lys Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro
                725   730   735
Val Phe Val Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys
                740   745   750
Lys Asp Lys Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe
                755   760   765
Gly Phe Asn Val Ser Lys Gln Ile Ile Arg Asp Ala Leu Leu Ser Lys
            770   775   780
Gln Met Ala Thr Met Tyr Leu Gln Gly Lys Leu Thr Pro Met Asn Tyr
785   790   795   800
Ile Tyr Glu Lys Lys Thr Gln Glu Glu Leu Arg Arg Glu Ala Thr Arg
                805   810   815
Thr Thr Asp Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys
            820   825   830
Lys Gly Phe Gly Glu Ala Tyr Pro Glu Arg Pro Ser Ile His Asp Cys
            835   840   845
Pro Val Trp Ile Glu Leu Lys Ile Asn Ile Ala Tyr Asp Phe Met Asp
850   855   860
Ser Ile Cys Gln Tyr Ile Thr Asn Cys Phe Glu Pro Leu Gly Met Glu
865   870   875   880
Asp Phe Ala Lys Leu Gly Ile Asn Val Ser Asp Asp
            885   890

<210> 43
<211> 3499
<212> DNA
<213> Caenorhabditis elegans

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tcatccccctc ctcttactcc ttctttctcg tccgctacta ctgtatcttc tggacatcta 180
cctgtataca caccagtggc cagtcatctg ccattacaat ttcatcaatt gacacttctt 240
caacaacaac cgccgtcctc attcactccc gattcttcct catcctcaac atcgtcgtct 300
ttggctgaaa ttcccgaaga cgttatgatg gagatgctgg tagatcaggg aactgatgca 360
tcgtcatccg cctccacgtc cacctcatct gtttcgagat cggagcgga cacgttcatg 420
aatacaccgg atgatgtgat gatgaatgat gatatggaac cgattcctcg tgatcggtgc 480
aatacgtggc caatgcgtag gccgcaactc gaaccaccac tcaactcgag tcccattatt 540
catgaacaaa ttcctgaaga agatgctgac ctatacggga gcaatgagca atgtggacag 600
ctcggcggag catcttcaaa cgggtcgaca gcaatgcttc atactccaga tggaagcaat 660
tctcatcaga catcgtttct tcggagtttc agaatgtccg aatcgccaga cgataccgta 720
tcgggaaaaa agacaacgac cagacggaac gcttggggaa atatgtcata tgctgaactt 780
atcactacag ccattatggc tagtccagag aaacggttaa ctcttgcaca agtttacgaa 840
tggatggtcc agaatgttcc atacttcagg gataagggag attcgaacag ttcagctgga 900
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gaaggagccg gaaagagctc gtggtgggtt attaatccag atgcaaagcc aggaatgaat 1020
ccacggcgta cacgtgaacg atccaatact attgagacga ctacaaaggc tcaactcgaa 1080
aaatctcgcc gcggagccaa gaagaggata aaggagagag cattgatggg ctcccttcac 1140
tcgacactta atggaaattc gattgccgga tcgattcaaa cgatttctca cgatttgtat 1200
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tctatgatga tctagaattc ccatcatggg ttggcgaatc ggttccagca attccaagtg 1380
atattgttga tagaactgat caaatgcgta tcgatgcaac tactcatagt tggtggagtt 1440
cagattaagc aggagtcgaa gccgattaag acggaaccaa ttgctccacc accatcatac 1500
cacgagttga acagtgtccg tggatcgtgt gctcagaatc cacttcttcg aaatccaatt 1560
gtgccaagca ctaacttcaa gccaatgcca ctaccgggtg cctatggaaa ctatcaaaat 1620

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ggtggaataa ctccaatcaa ttggctatca acatccaact catctccact gcctggaatt 1680
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ctcttcattt tgtttcccct ggtgttgttc gaaagagaga tagcaaagca gcgaggagtg 1920
aggtaagcag caataaaaat tttggatttt tttttggttt ttccagaaat aatcgatttt 1980
ctggaaaatt tcaaaaaaaa atcggaattt ttagttaatt atttgatgag aaaaaaaaat 2040
tagaaaacat aaggaaaaat gaaaagcgtt ttttttttc gaaaatttta gaattctcct 2100
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gatttttttaa attttttttt tactttccag atagtaaaat cattagcact gaaaattatt 2340
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<210> 44
<211> 2704
<212> DNA
<213> Caenorhabditis elegans

<400> 44
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tatgcaacaa cttcctcaac ctctattgaa tcttaacatg acgacgttaa catcttctgg 180
cagttccgtg gccagttcca ttggaggcgg agctcaatgc tctccgtgcg cgtcgggctc 240
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acagaagaaa ccgaatccat ggggtgagga atcctattcg gatatcattg ccaaagcatt 480
ggaatcggcg ccagacggaa ggcttaaact caatgagatt tatcaatggt tctctgataa 540
tattccctac tttggagaac gatctagtcc cgaggaggcc gccggatgga agaactcgat 600
ccgtcacaat ctgtctcttc attctcgttt catgcgaatt cagaatgaag gagccggaaa 660
gagctcgtgg tgggttatta atccagatgc aaagccagga atgaatccac ggcgtacacg 720
tgaacgatcc aatactattg agacgactac aaaggctcaa ctcgaaaaat ctcgccgcgg 780
agccaagaag aggataaagg agagagcatt gatgggctcc cttcactcga cacttaatgg 840
aaattcgatt gccggatcga ttcaaacgat ttctcacgat ttgtatgatg atgattcaat 900
gcaaggagca tttgataacg ttccatcatc tttccgtccc cgaactcaat cgaacctctc 960
gattcctgga tcgtcgtctc gtgtttctcc agctattgga agtgatatct atgatgatct 1020
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aactgatcaa atgcgtatcg atgcaactac tcatattggt ggagttcaga ttaagcagga 1140
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gctgagtcaa gctggagggc agcatattca ttttgatttg taaattctct tcattttgtt 1560
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<211> 510
<212> PRT
<213> Caenorhabditis elegans

<400> 45
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            20                  25                  30
Asn Thr Pro Asp Asp Val Met Met Asn Asp Asp Met Glu Pro Ile Pro
        35                  40                  45
Arg Asp Arg Cys Asn Thr Trp Pro Met Arg Arg Pro Gln Leu Glu Pro
    50                  55                  60
Pro Leu Asn Ser Ser Pro Ile Ile His Glu Gln Ile Pro Glu Glu Asp
65                  70                  75                  80
Ala Asp Leu Tyr Gly Ser Asn Glu Gln Cys Gly Gln Leu Gly Gly Ala
                85                  90                  95
Ser Ser Asn Gly Ser Thr Ala Met Leu His Thr Pro Asp Gly Ser Asn
            100                 105                 110
Ser His Gln Thr Ser Phe Pro Ser Asp Phe Arg Met Ser Glu Ser Pro
        115                 120                 125
Asp Asp Thr Val Ser Gly Lys Lys Thr Thr Thr Arg Arg Asn Ala Trp
    130                 135                 140
Gly Asn Met Ser Tyr Ala Glu Leu Ile Thr Thr Ala Ile Met Ala Ser
145                 150                 155                 160
Pro Glu Lys Arg Leu Thr Leu Ala Gln Val Tyr Glu Trp Met Val Gln
                165                 170                 175
Asn Val Pro Tyr Phe Arg Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly
            180                 185                 190
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Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Arg Phe Met
    195                 200             205
Arg Ile Gln Asn Glu Gly Ala Gly Lys Ser Ser Trp Trp Val Ile Asn
    210             215             220
Pro Asp Ala Lys Pro Gly Met Asn Pro Arg Arg Thr Arg Glu Arg Ser
225             230             235             240
Asn Thr Ile Glu Thr Thr Thr Lys Ala Gln Leu Glu Lys Ser Arg Arg
                245             250             255
Gly Ala Lys Lys Arg Ile Lys Glu Arg Ala Leu Met Gly Ser Leu His
            260             265             270
Ser Thr Leu Asn Gly Asn Ser Ile Ala Gly Ser Ile Gln Thr Ile Ser
            275             280             285
His Asp Leu Tyr Asp Asp Asp Ser Met Gln Gly Ala Phe Asp Asn Val
    290             295             300
Pro Ser Ser Phe Arg Pro Arg Thr Gln Ser Asn Leu Ser Ile Pro Gly
305             310             315             320
Ser Ser Ser Arg Val Ser Pro Ala Ile Gly Ser Asp Ile Tyr Asp Asp
            325             330             335
Leu Glu Phe Pro Ser Trp Val Gly Glu Ser Val Pro Ala Ile Pro Ser
            340             345             350
Asp Ile Val Asp Arg Thr Asp Gln Met Arg Ile Asp Ala Thr Thr His
    355             360             365
Ile Gly Gly Val Gln Ile Lys Gln Glu Ser Lys Pro Ile Lys Thr Glu
    370             375             380
Pro Ile Ala Pro Pro Pro Ser Tyr His Glu Leu Asn Ser Val Arg Gly
385             390             395             400
Ser Cys Ala Gln Asn Pro Leu Leu Arg Asn Pro Ile Val Pro Ser Thr
            405             410             415
Asn Phe Lys Pro Met Pro Leu Pro Gly Ala Tyr Gly Asn Tyr Gln Asn
            420             425             430
Gly Gly Ile Thr Pro Ile Asn Trp Leu Ser Thr Ser Asn Ser Ser Pro
            435             440             445
Leu Pro Gly Ile Gln Ser Cys Gly Ile Val Ala Ala Gln His Thr Val
    450             455             460
Ala Ser Ser Ser Ala Leu Pro Ile Asp Leu Glu Asn Leu Thr Leu Pro
465             470             475             480
Asp Gln Pro Leu Met Asp Thr Met Asp Val Asp Ala Leu Ile Arg His
            485             490             495
Glu Leu Ser Gln Ala Gly Gly Gln His Ile His Phe Asp Leu
            500             505             510


<210> 46
<211> 509
<212> PRT
<213> Caenorhabditis elegans

<400> 46
Met Gln Gln Tyr Ile Tyr Gln Glu Ser Ser Ala Thr Ile Pro His His
 1               5               10              15
His Leu Asn Gln His Asn Asn Pro Tyr His Pro Met His Pro His His
            20              25              30
Gln Leu Pro His Met Gln Gln Leu Pro Gln Pro Leu Leu Asn Leu Asn
            35              40              45
Met Thr Thr Leu Thr Ser Ser Gly Ser Ser Val Ala Ser Ser Ile Gly
    50              55              60
Gly Gly Ala Gln Cys Ser Pro Cys Ala Ser Gly Ser Ser Thr Ala Ala
65              70              75              80
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Thr Asn Ser Ser Gln Gln Gln Gln Thr Val Gly Gln Met Leu Ala Ala
                85                  90                  95
Ser Val Pro Cys Ser Ser Ser Gly Met Thr Leu Gly Met Ser Leu Asn
            100                 105                 110
Leu Ser Gln Gly Gly Gly Pro Met Pro Ala Lys Lys Lys Arg Cys Arg
            115             120                 125
Lys Lys Pro Thr Asp Gln Leu Ala Gln Lys Lys Pro Asn Pro Trp Gly
    130             135                 140
Glu Glu Ser Tyr Ser Asp Ile Ile Ala Lys Ala Leu Glu Ser Ala Pro
145             150                 155                 160
Asp Gly Arg Leu Lys Leu Asn Glu Ile Tyr Gln Trp Phe Ser Asp Asn
            165             170                 175
Ile Pro Tyr Phe Gly Glu Arg Ser Ser Pro Glu Glu Ala Ala Gly Trp
            180             185                 190
Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Arg Phe Met Arg
    195             200                 205
Ile Gln Asn Glu Gly Ala Gly Lys Ser Ser Trp Trp Val Ile Asn Pro
    210             215                 220
Asp Ala Lys Pro Gly Met Asn Pro Arg Arg Thr Arg Glu Arg Ser Asn
225             230                 235                 240
Thr Ile Glu Thr Thr Thr Lys Ala Gln Leu Glu Lys Ser Arg Arg Gly
            245                 250                 255
Ala Lys Lys Arg Ile Lys Glu Arg Ala Leu Met Gly Ser Leu His Ser
            260                 265                 270
Thr Leu Asn Gly Asn Ser Ile Ala Gly Ser Ile Gln Thr Ile Ser His
    275             280                 285
Asp Leu Tyr Asp Asp Asp Ser Met Gln Gly Ala Phe Asp Asn Val Pro
    290             295                 300
Ser Ser Phe Arg Pro Arg Thr Gln Ser Asn Leu Ser Ile Pro Gly Ser
305             310                 315                 320
Ser Ser Arg Val Ser Pro Ala Ile Gly Ser Asp Ile Tyr Asp Asp Leu
            325             330                 335
Glu Phe Pro Ser Trp Val Gly Glu Ser Val Pro Ala Ile Pro Ser Asp
            340             345                 350
Ile Val Asp Arg Thr Asp Gln Met Arg Ile Asp Ala Thr Thr His Ile
            355             360                 365
Gly Gly Val Gln Ile Lys Gln Glu Ser Lys Pro Ile Lys Thr Glu Pro
    370             375                 380
Ile Ala Pro Pro Pro Ser Tyr His Glu Leu Asn Ser Val Arg Gly Ser
385             390                 395                 400
Cys Ala Gln Asn Pro Leu Leu Arg Asn Pro Ile Val Pro Ser Thr Asn
            405                 410                 415
Phe Lys Pro Met Pro Leu Pro Gly Ala Tyr Gly Asn Tyr Gln Asn Gly
            420             425                 430
Gly Ile Thr Pro Ile Asn Trp Leu Ser Thr Ser Asn Ser Ser Pro Leu
            435             440                 445
Pro Gly Ile Gln Ser Cys Gly Ile Val Ala Ala Gln His Thr Val Ala
    450             455                 460
Ser Ser Ser Ala Leu Pro Ile Asp Leu Glu Asn Leu Thr Leu Pro Asp
465             470                 475                 480
Gln Pro Leu Met Asp Thr Met Asp Val Asp Ala Leu Ile Arg His Glu
            485             490                 495
Leu Ser Gln Ala Gly Gly Gln His Ile His Phe Asp Leu
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<210> 47
<211> 3504

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<400> 47
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cgagaacgcc catcgctgga gaccgagaat ggcaaaggat cgctgctcct ggaaaatgaa 180
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tggtttcttg caaatgtgcg aacatcgcta gaaatcaagc tatcagattt caaacatcaa 300
cttttcgaat tgattgctcc gatgaagtgg ggaacatatt ccgtaaagcc acaggattat 360
gtgttcagac agttgaataa tttcggcgaa attgaagtta tatttaacga cgatcaaccc 420
ctgtcgaaat tagagctcca cggcactttc ccaatgcttt ttctctacca acctgatgga 480
ataaacaggg ataaagaatt aatgagtgat ataagtcatt gtctaggata ctcactggat 540
aaactggaag agagcctcga tgaggaactc cgtcaatttc gtgcttctct ctgggctcgt 600
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gaacagtact tgtgtgttgg tgaatcgtgc ccgaaagatt tggaatcaaa agtcaaggct 720
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gaaggatggt ttcttcaatt ggctggacgt accacgtttg ttacaaatcc agatgtcaaa 960
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gatcatttga agaaaccct cttctgcaat ggagaaagca aagaagaagc gagaaagttt 3420
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<210> 48
<211> 1167
<212> PRT
<213> Caenorhabditis elegans

<400> 48
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1               5                   10                  15
Arg Arg Ile Ser Gln Met His Val Asn Ile Leu His Pro Gln Leu Gln
            20                  25                  30
Thr Met Val Glu Gln Trp Gln Met Arg Glu Arg Pro Ser Leu Glu Thr
        35                  40                  45
Glu Asn Gly Lys Gly Ser Leu Leu Leu Glu Asn Glu Gly Val Ala Asp
    50                  55                  60
Ile Ile Thr Met Cys Pro Phe Gly Glu Val Ile Ser Val Val Phe Pro
65                  70                  75                  80
Trp Phe Leu Ala Asn Val Arg Thr Ser Leu Glu Ile Lys Leu Ser Asp
                85                  90                  95
Phe Lys His Gln Leu Phe Glu Leu Ile Ala Pro Met Lys Trp Gly Thr
            100                 105                 110
Tyr Ser Val Lys Pro Gln Asp Tyr Val Phe Arg Gln Leu Asn Asn Phe
            115                 120                 125
Gly Glu Ile Glu Val Ile Phe Asn Asp Asp Gln Pro Leu Ser Lys Leu
    130                 135                 140
Glu Leu His Gly Thr Phe Pro Met Leu Phe Leu Tyr Gln Pro Asp Gly
145                 150                 155                 160
Ile Asn Arg Asp Lys Glu Leu Met Ser Asp Ile Ser His Cys Leu Gly
                165                 170                 175
Tyr Ser Leu Asp Lys Leu Glu Glu Ser Leu Asp Glu Glu Leu Arg Gln
            180                 185                 190
Phe Arg Ala Ser Leu Trp Ala Arg Thr Lys Lys Thr Cys Leu Thr Arg
            195                 200                 205
Gly Leu Glu Gly Thr Ser His Tyr Ala Phe Pro Glu Glu Gln Tyr Leu
    210                 215                 220
Cys Val Gly Glu Ser Cys Pro Lys Asp Leu Glu Ser Lys Val Lys Ala
225                 230                 235                 240
Ala Lys Leu Ser Tyr Gln Met Phe Trp Arg Lys Arg Lys Ala Glu Ile
                245                 250                 255
Asn Gly Val Cys Glu Lys Met Met Lys Ile Gln Ile Glu Phe Asn Pro
                260                 265                 270
Asn Glu Thr Pro Lys Ser Leu Leu His Thr Phe Leu Tyr Glu Met Arg
            275                 280                 285
Lys Leu Asp Val Tyr Asp Thr Asp Asp Pro Ala Asp Glu Gly Trp Phe
    290                 295                 300
Leu Gln Leu Ala Gly Arg Thr Thr Phe Val Thr Asn Pro Asp Val Lys
305                 310                 315                 320
Leu Thr Ser Tyr Asp Gly Val Arg Ser Glu Leu Glu Ser Tyr Arg Cys
                325                 330                 335
Pro Gly Phe Val Val Arg Arg Gln Ser Leu Val Leu Lys Asp Tyr Cys
            340                 345                 350
Arg Pro Lys Pro Leu Tyr Glu Pro His Tyr Val Arg Ala His Glu Arg
            355                 360                 365
```

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Lys Leu Ala Leu Asp Val Leu Ser Val Ser Ile Asp Ser Thr Pro Lys
    370                 375                 380
Gln Ser Lys Asn Ser Asp Met Val Met Thr Asp Phe Arg Pro Thr Ala
385                 390                 395                 400
Ser Leu Lys Gln Val Ser Leu Trp Asp Leu Asp Ala Asn Leu Met Ile
                405                 410                 415
Arg Pro Val Asn Ile Ser Gly Phe Asp Phe Pro Ala Asp Val Asp Met
                420                 425                 430
Tyr Val Arg Ile Glu Phe Ser Val Tyr Val Gly Thr Leu Thr Leu Ala
        435                 440                 445
Ser Lys Ser Thr Thr Lys Val Asn Ala Gln Phe Ala Lys Trp Asn Lys
    450                 455                 460
Glu Met Tyr Thr Phe Asp Leu Tyr Met Lys Asp Met Pro Pro Ser Ala
465                 470                 475                 480
Val Leu Ser Ile Arg Val Leu Tyr Gly Lys Val Lys Leu Lys Ser Glu
                485                 490                 495
Glu Phe Glu Val Gly Trp Val Asn Met Ser Leu Thr Asp Trp Arg Asp
            500                 505                 510
Glu Leu Arg Gln Gly Gln Phe Leu Phe His Leu Trp Ala Pro Glu Pro
        515                 520                 525
Thr Ala Asn Arg Ser Arg Ile Gly Glu Asn Gly Ala Arg Ile Gly Thr
    530                 535                 540
Asn Ala Ala Val Thr Ile Glu Ile Ser Ser Tyr Gly Gly Arg Val Arg
545                 550                 555                 560
Met Pro Ser Gln Gly Gln Tyr Thr Tyr Leu Val Lys His Arg Ser Thr
                565                 570                 575
Trp Thr Glu Thr Leu Asn Ile Met Gly Asp Asp Tyr Glu Ser Cys Ile
            580                 585                 590
Arg Asp Pro Gly Tyr Lys Lys Leu Gln Met Leu Val Lys Lys His Glu
        595                 600                 605
Ser Gly Ile Val Leu Glu Glu Asp Glu Gln Arg His Val Trp Met Trp
    610                 615                 620
Arg Arg Tyr Ile Gln Lys Gln Glu Pro Asp Leu Leu Ile Val Leu Ser
625                 630                 635                 640
Glu Leu Ala Phe Val Trp Thr Asp Arg Glu Asn Phe Ser Glu Leu Tyr
                645                 650                 655
Val Met Leu Glu Lys Trp Lys Pro Pro Ser Val Ala Ala Ala Leu Thr
            660                 665                 670
Leu Leu Gly Lys Arg Cys Thr Asp Arg Val Ile Arg Lys Phe Ala Val
        675                 680                 685
Glu Lys Leu Asn Glu Gln Leu Ser Pro Val Thr Phe His Leu Phe Ile
    690                 695                 700
Leu Pro Leu Ile Gln Ala Leu Lys Tyr Glu Pro Arg Ala Gln Ser Glu
705                 710                 715                 720
Val Gly Met Met Leu Leu Thr Arg Ala Leu Cys Asp Tyr Arg Ile Gly
                725                 730                 735
His Arg Leu Phe Trp Leu Leu Arg Ala Glu Ile Ala Arg Leu Arg Asp
            740                 745                 750
Cys Asp Leu Lys Ser Glu Glu Tyr Arg Arg Ile Ser Leu Leu Met Glu
        755                 760                 765
Ala Tyr Leu Arg Gly Asn Glu Glu His Ile Lys Ile Ile Thr Arg Gln
    770                 775                 780
Val Asp Met Val Asp Glu Leu Thr Arg Ile Ser Thr Leu Val Lys Gly
785                 790                 795                 800
Met Pro Lys Asp Val Ala Thr Met Lys Leu Arg Asp Glu Leu Arg Ser
                805                 810                 815
Ile Ser His Lys Met Glu Asn Met Asp Ser Pro Leu Asp Pro Val Tyr
            820                 825                 830
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Lys Leu Gly Glu Met Ile Ile Asp Lys Ala Ile Val Leu Gly Ser Ala
        835             840             845
Lys Arg Pro Leu Met Leu His Trp Lys Asn Lys Asn Pro Lys Ser Asp
    850             855             860
Leu His Leu Pro Phe Cys Ala Met Ile Phe Lys Asn Gly Asp Asp Leu
865             870             875             880
Arg Gln Asp Met Leu Val Leu Gln Val Leu Glu Val Met Asp Asn Ile
            885             890             895
Trp Lys Ala Ala Asn Ile Asp Cys Cys Leu Asn Pro Tyr Ala Val Leu
        900             905             910
Pro Met Gly Glu Met Ile Gly Ile Ile Glu Val Val Pro Asn Cys Lys
        915             920             925
Thr Ile Phe Glu Ile Gln Val Gly Thr Gly Phe Met Asn Thr Ala Val
    930             935             940
Arg Ser Ile Asp Pro Ser Phe Met Asn Lys Trp Ile Arg Lys Gln Cys
945             950             955             960
Gly Ile Glu Asp Glu Lys Lys Lys Ser Lys Asp Ser Thr Lys Asn
            965             970             975
Pro Ile Glu Lys Lys Ile Asp Asn Thr Gln Ala Met Lys Lys Tyr Phe
        980             985             990
Glu Ser Val Asp Arg Phe Leu Tyr Ser Cys Val Gly Tyr Ser Val Ala
        995             1000            1005
Thr Tyr Ile Met Gly Ile Lys Asp Arg His Ser Asp Asn Leu Met Leu
    1010            1015            1020
Thr Glu Asp Gly Lys Tyr Val His Ile Asp Phe Gly His Ile Leu Gly
1025            1030            1035            1040
His Gly Lys Thr Lys Leu Gly Ile Gln Arg Asp Arg Gln Pro Phe Ile
            1045            1050            1055
Leu Thr Glu His Phe Met Thr Val Ile Arg Ser Gly Lys Ser Val Asp
            1060            1065            1070
Gly Asn Ser His Glu Leu Gln Lys Phe Lys Thr Leu Cys Val Glu Ala
            1075            1080            1085
Tyr Glu Val Met Trp Asn Asn Arg Asp Leu Phe Val Ser Leu Phe Thr
    1090            1095            1100
Leu Met Leu Gly Met Glu Leu Pro Glu Leu Ser Thr Lys Ala Asp Leu
1105            1110            1115            1120
Asp His Leu Lys Lys Thr Leu Phe Cys Asn Gly Glu Ser Lys Glu Glu
            1125            1130            1135
Ala Arg Lys Phe Phe Ala Gly Ile Tyr Glu Glu Ala Phe Asn Gly Ser
            1140            1145            1150
Trp Ser Thr Lys Thr Asn Trp Leu Phe His Ala Val Lys His Tyr
    1155            1160            1165
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<210> 49
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe/primer derived from C. elegans

<400> 49
ggaaatattt taggccagat gcg   23

<210> 50
<211> 20
<212> DNA

<213> Artificial Sequence

<220>
<223> Probe/primer derived from C. elegans

<400> 50
cggacagtcc tgaatacacc   20

<210> 51
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe/primer derived from C. elegans

<400> 51
tctcgttgtt tgccgtcgga tgtctgcc   28

<210> 52
<211> 3017
<212> DNA
<213> Caenorhabditis elegans

<400> 52
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gtaccagcac cggaggcccg ctttatggtg gaaaaccttc tcatggattg gaagatattc 180
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atgtaggaaa tatggctaat gttcccgacg agcacacacc gatgatgtca ccagtgaata 300
caactacaaa gattctacaa cggagtggta ttaaaatgga aatcccgcca tatttggatc 360
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cagtagatga agcacggaaa aagatcgaag ttcccgacgc tagtgcgccg ccaaacaaaa 540
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caattgtgta ctatgagaaa aatttgcaaa ttggcgagaa aaaatgttcg agaggaaatt 1980

-33-

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<210> 53
<211> 3119
<212> DNA
<213> Caenorhabditis elegans

<400> 53
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ataatttaac gggccttccc ggtacctcca tcccgccaca gttcaactat tctcagcccg 120
gtaccagcac cggaggcccg ctttatggtg gaaaaccttc tcatggattg gaagatattc 180
ctgatgtaga ggaatatgag aggaacctgc tcggggctgg agcaggtttt aatctgctca 240
atgtaggaaa tatggctaat gaatttaaac caataatcac attggacacg aaaccacctc 300
gtgatgccaa caagtcattg gcattcaatg gcgggttgaa gctaatcact ccgaaaactg 360
aagttcccga cgagcacaca ccgatgatgt caccagtgaa tacaactaca aagattctac 420
aacggagtgg tattaaaatg gaaatcccgc catatttgga tccagacagt caggatgatg 480
acccggaaga tggtgtcaac tacccggatc cagatttatt tgacacaaaa aacacaaata 540
tgaccgagta cgatttggat gtgttgaagc ttggaaaacc agcagtagat gaagcacgga 600
aaaagatcga agttcccgac gctagtcgcc cgccaaacaa aattgtagaa tatttgatgt 660
attatagaac gttaaaagaa agtgaactca tacaactgaa tgcgtatcgg acaaaacgaa 720
atcgattatc gttgaacttg gtcaaaaaca atattgatcg agagttcgac caaaaagctt 780
gcgagtccct ggtgaaaaaa ttgaaggata agaagaatga tctccagaac ctgattgatg 840
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gccggttaca ggtccacgga agaaaaggtt tccctcacgt agtctatggc aaactgtgga 960
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gccatccaaa tcactattcc tacgactgtg gtccgaactt gtacgggttt ccaactcctt 1560
atccggattt tcaccatcct ttcaatcagc aaccacacca gccgccacaa ctatcacaaa 1620
accatacgtc ccaacaaggc agtcatcaac cagggcacca aggtcaggta ccgaatgatc 1680
caccaatttc aagaccagtg ttacaaccat caacagtcac cttggacgtg ttccgtcggt 1740
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taattcggtc tagtaacaaa ttcattgaag aatttgattc gccgatttgt ggtgtgacag 1860
ttgttcgacc gcggatgaca gacggtgagg ttttggagaa catcatgccg gaagatgcac 1920
catatcatga catttgcaag ttcattttga ggctcacatc agaaagtgta actttctcag 1980
```

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gagaggggcc agaagttagt gatttgaacg aaaaatgggg aacaattgtg tactatgaga 2040
aaaatttgca aattggcgag aaaaaatgtt cgagaggaaa tttccacgtg gatggcggat 2100
tcatttgctc tgagaatcgt tacagtctcg gacttgagcc aaatccaatt agagaaccag 2160
tggcgtttaa agttcgtaaa gcaatagtgg atggaattcg cttttcctac aaaaaagacg 2220
ggagtgtttg gcttcaaaac cgcatgaagt acccggtatt tgtcacttct gggtatctcg 2280
acgagcaatc aggaggccta aagaaggata aagtgcacaa agtttacgga tgtgcgtcta 2340
tcaaaacgtt tggcttcaac gtttccaaac aaatcatcag agacgcgctt ctttccaagc 2400
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agactcagga agagctgcga agggaagcaa cacgcaccac tgattcattg gccaagtact 2520
gttgtgtccg tgtctcgttc tgcaaaggat ttggagaagc atacccagaa cgcccgtcaa 2580
ttcatgattg tccagtttgg attgagttga aaatcaacat tgcctacgat ttcatggatt 2640
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tgggaatcaa cgtcagtgat gactaaatga taactttttt cactcaccct actagatact 2760
gatttagtct tattccaaat catccaacga tatcaaactt tttcctttga actttgcata 2820
ctatgttatc acaagttcca agcagtttca atacaaacat aggatatgtt aacaactttt 2880
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cgcatatgtc atatattgca ccgtggccct ttttattgta acttttaata tattttcttc 3060
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```

<210> 54
<211> 103
<212> PRT
<213> Caenorhabditis elegans

<400> 54
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Lys Lys Thr Thr Thr Arg Arg Asn Ala Trp Gly Asn Met Ser Tyr Ala
1               5                   10                  15
Glu Leu Ile Thr Thr Ala Ile Met Ala Ser Pro Glu Lys Arg Leu Thr
            20                  25                  30
Leu Ala Gln Val Tyr Glu Trp Met Val Gln Asn Val Pro Tyr Phe Arg
        35                  40                  45
Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly Trp Lys Asn Ser Ile Arg
    50                  55                  60
His Asn Leu Ser Leu His Ser Arg Phe Met Arg Ile Gln Asn Glu Gly
65                  70                  75                  80
Ala Gly Lys Ser Ser Trp Trp Val Ile Asn Pro Asp Ala Lys Pro Gly
                85                  90                  95
Met Asn Pro Arg Arg Thr Arg
            100
```

<210> 55
<211> 41
<212> PRT
<213> Caenorhabditis elegans

<400> 55
```
Thr Phe Met Asn Thr Pro Asp Asp Val Met Met Asn Asp Asp Met Glu
1               5                   10                  15
Pro Ile Pro Arg Asp Arg Cys Asn Thr Trp Pro Met Arg Arg Pro Gln
            20                  25                  30
Leu Glu Pro Pro Leu Asn Ser Ser Pro
        35                  40
```

<210> 56
<211> 109

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<212> PRT
<213> Caenorhabditis elegans

<400> 56
Asp Asp Thr Val Ser Gly Lys Lys Thr Thr Thr Arg Arg Asn Ala Trp
 1   5   10   15
Gly Asn Met Ser Tyr Ala Glu Leu Ile Thr Thr Ala Ile Met Ala Ser
            20   25   30
Pro Glu Lys Arg Leu Thr Leu Ala Gln Val Tyr Glu Trp Met Val Gln
            35   40   45
Asn Val Pro Tyr Phe Arg Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly
        50   55   60
Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Arg Phe Met
65   70   75   80
Arg Ile Gln Asn Glu Gly Ala Gly Lys Ser Ser Trp Trp Val Ile Asn
                85   90   95
Pro Asp Ala Lys Pro Gly Met Asn Pro Arg Arg Thr Arg
                100   105

<210> 57
<211> 655
<212> PRT
<213> Homo sapiens

<400> 57
Met Ala Glu Ala Pro Gln Val Val Glu Ile Asp Pro Asp Phe Glu Pro
 1   5   10   15
Leu Pro Arg Pro Arg Ser Cys Thr Trp Pro Leu Pro Arg Pro Glu Phe
            20   25   30
Ser Gln Ser Asn Ser Ala Thr Ser Ser Pro Ala Pro Ser Gly Ser Ala
            35   40   45
Ala Ala Asn Pro Asp Ala Ala Ala Gly Leu Pro Ser Ala Ser Ala Ala
        50   55   60
Ala Val Ser Ala Asp Phe Met Ser Asn Leu Ser Leu Leu Glu Glu Ser
65   70   75   80
Glu Asp Phe Pro Gln Ala Pro Gly Ser Val Ala Ala Ala Val Ala Ala
                85   90   95
Ala Ala Ala Ala Ala Ala Thr Gly Gly Leu Cys Gly Asp Phe Gln Gly
                100   105   110
Pro Glu Ala Gly Cys Leu His Pro Ala Pro Pro Gln Pro Pro Pro Pro
            115   120   125
Gly Pro Val Ser Gln His Pro Pro Val Pro Pro Ala Ala Ala Gly Pro
        130   135   140
Leu Ala Gly Gln Pro Arg Lys Ser Ser Ser Ser Arg Arg Asn Ala Trp
145   150   155   160
Gly Asn Leu Ser Tyr Ala Asp Leu Ile Thr Lys Ala Ile Glu Ser Ser
                165   170   175
Ala Glu Lys Arg Leu Thr Leu Ser Gln Ile Tyr Glu Trp Met Val Lys
                180   185   190
Ser Val Pro Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly
            195   200   205
Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Lys Phe Ile
        210   215   220
Arg Val Gln Asn Glu Gly Thr Gly Lys Ser Ser Trp Trp Met Leu Asn
225   230   235   240
Pro Glu Gly Gly Lys Ser Gly Lys Ser Pro Arg Arg Arg Ala Ala Ser
                245   250   255

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```
Met Asp Asn Asn Ser Lys Phe Ala Lys Ser Arg Ser Arg Ala Ala Lys
            260                 265                 270
Lys Lys Ala Ser Leu Gln Ser Gly Gln Glu Gly Ala Gly Asp Ser Pro
        275                 280                 285
Gly Ser Gln Phe Ser Lys Trp Pro Ala Ser Pro Gly Ser His Ser Asn
    290                 295                 300
Asp Asp Phe Asp Asn Trp Ser Thr Phe Arg Pro Arg Thr Ser Ser Asn
305                 310                 315                 320
Ala Ser Thr Ile Ser Gly Arg Leu Ser Pro Ile Met Thr Glu Gln Asp
                325                 330                 335
Asp Leu Gly Glu Gly Asp Val His Ser Met Val Tyr Pro Pro Ser Ala
            340                 345                 350
Ala Lys Met Ala Ser Thr Leu Pro Ser Leu Ser Glu Ile Ser Asn Pro
        355                 360                 365
Glu Asn Met Glu Asn Leu Leu Asp Asn Leu Asn Leu Leu Ser Ser Pro
    370                 375                 380
Thr Ser Leu Thr Val Ser Thr Gln Ser Ser Pro Gly Thr Met Met Gln
385                 390                 395                 400
Gln Thr Pro Cys Tyr Ser Phe Ala Pro Pro Asn Thr Ser Leu Asn Ser
                405                 410                 415
Pro Ser Pro Asn Tyr Gln Lys Tyr Thr Tyr Gly Gln Ser Ser Met Ser
                420                 425                 430
Pro Leu Pro Gln Met Pro Ile Gln Thr Leu Gln Asp Asn Lys Ser Ser
            435                 440                 445
Tyr Gly Gly Met Ser Gln Tyr Asn Cys Ala Pro Gly Leu Leu Lys Glu
    450                 455                 460
Leu Leu Thr Ser Asp Ser Pro Pro His Asn Asp Ile Met Thr Pro Val
465                 470                 475                 480
Asp Pro Gly Val Ala Gln Pro Asn Ser Arg Val Leu Gly Gln Asn Val
                485                 490                 495
Met Met Gly Pro Asn Ser Val Met Ser Thr Tyr Gly Ser Gln Ala Ser
                500                 505                 510
His Asn Lys Met Met Asn Pro Ser Ser His Thr His Pro Gly His Ala
        515                 520                 525
Gln Gln Thr Ser Ala Val Asn Gly Arg Pro Leu Pro His Thr Val Ser
    530                 535                 540
Thr Met Pro His Thr Ser Gly Met Asn Arg Leu Thr Gln Val Lys Thr
545                 550                 555                 560
Pro Val Gln Val Pro Leu Pro His Pro Met Gln Met Ser Ala Leu Gly
                565                 570                 575
Gly Tyr Ser Ser Val Ser Ser Cys Asn Gly Tyr Gly Arg Met Gly Leu
            580                 585                 590
Leu His Gln Glu Lys Leu Pro Ser Asp Leu Asp Gly Met Phe Ile Glu
        595                 600                 605
Arg Leu Asp Cys Asp Met Glu Ser Ile Ile Arg Asn Asp Leu Met Asp
    610                 615                 620
Gly Asp Thr Leu Asp Phe Asn Phe Asp Asn Val Leu Pro Asn Gln Ser
625                 630                 635                 640
Phe Pro His Ser Val Lys Thr Thr Thr His Ser Trp Val Ser Gly
                645                 650                 655
```

<210> 58
<211> 98
<212> PRT
<213> Caenorhabditis elegans

<400> 58

```
Lys Pro Asn Pro Trp Gly Glu Glu Ser Tyr Ser Asp Ile Ile Ala Lys
 1               5                  10                  15
Ala Leu Glu Ser Ala Pro Asp Gly Arg Leu Lys Leu Asn Glu Ile Tyr
            20                  25                  30
Gln Trp Phe Ser Asp Asn Ile Pro Tyr Phe Gly Glu Arg Ser Ser Pro
        35                  40                  45
Glu Glu Ala Ala Gly Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu
    50                  55                  60
His Ser Arg Phe Met Arg Ile Gln Asn Glu Gly Ala Gly Lys Ser Ser
65                  70                  75                  80
Trp Trp Val Ile Asn Pro Asp Ala Lys Pro Gly Met Asn Pro Arg Arg
                85                  90                  95
Thr Arg
```

```
<210> 59
<211> 7
<212> PRT
<213> Caenorhabditis elegans

<400> 59
Trp Lys Asn Ser Ile Arg His
 1               5
```

```
<210> 60
<211> 121
<212> PRT
<213> Caenorhabditis elegans

<400> 60
Gln Val Leu Asp Asp His Asp Tyr Gly Arg Cys Val Asp Trp Trp Gly
 1               5                  10                  15
Val Gly Val Val Met Tyr Glu Met Met Cys Gly Arg Leu Pro Phe Tyr
            20                  25                  30
Ser Lys Asp His Asn Lys Leu Phe Glu Leu Ile Met Ala Gly Asp Leu
        35                  40                  45
Arg Phe Pro Ser Lys Leu Ser Gln Glu Ala Arg Thr Leu Leu Thr Gly
    50                  55                  60
Leu Leu Val Lys Asp Pro Thr Gln Arg Leu Gly Gly Gly Pro Glu Asp
65                  70                  75                  80
Ala Leu Glu Ile Cys Arg Ala Asp Phe Phe Arg Thr Val Asp Trp Glu
                85                  90                  95
Ala Thr Tyr Arg Lys Glu Ile Glu Pro Pro Tyr Lys Pro Asn Val Gln
               100                 105                 110
Ser Glu Thr Asp Thr Ser Tyr Phe Asp
           115                 120
```

```
<210> 61
<211> 66
<212> PRT
<213> Caenorhabditis elegans

<400> 61
Thr Met Glu Asp Phe Asp Phe Leu Lys Val Leu Gly Lys Gly Thr Phe
 1               5                  10                  15
```

```
Gly Lys Val Ile Leu Cys Lys Glu Lys Arg Thr Gln Lys Leu Tyr Ala
              20                  25                  30
Ile Lys Ile Leu Lys Lys Asp Val Ile Ile Ala Arg Glu Glu Val Ala
              35                  40                  45
His Thr Leu Thr Glu Asn Arg Val Leu Gln Arg Cys Lys His Pro Phe
    50                      55                  60
Leu Thr
65


<210> 62
<211> 45
<212> PRT
<213> Caenorhabditis elegans

<400> 62
Lys Leu Glu Asn Leu Leu Leu Asp Lys Asp Gly His Ile Lys Ile Ala
 1               5                  10                  15
Asp Phe Gly Leu Cys Lys Glu Glu Ile Ser Phe Gly Asp Lys Thr Ser
              20                  25                  30
Thr Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val
              35                  40                  45


<210> 63
<211> 57
<212> PRT
<213> Caenorhabditis elegans

<400> 63
Tyr Phe Gln Glu Leu Lys Tyr Ser Phe Gln Glu Gln His Tyr Leu Cys
 1               5                  10                  15
Phe Val Met Gln Phe Ala Asn Gly Gly Glu Leu Phe Thr His Val Arg
              20                  25                  30
Lys Cys Gly Thr Phe Ser Glu Pro Arg Ala Arg Phe Tyr Gly Ala Glu
              35                  40                  45
Ile Val Leu Ala Leu Gly Tyr Leu His
    50                      55


<210> 64
<211> 59
<212> PRT
<213> Caenorhabditis elegans

<400> 64
Ser Thr Phe Ala Ile Phe Tyr Phe Gln Thr Met Leu Phe Glu Lys Pro
 1               5                  10                  15
Arg Pro Asn Met Phe Met Val Arg Cys Leu Gln Trp Thr Thr Val Ile
              20                  25                  30
Glu Arg Thr Phe Tyr Ala Glu Ser Ala Glu Val Arg Gln Arg Trp Ile
              35                  40                  45
His Ala Ile Glu Ser Ile Ser Lys Lys Tyr Lys
    50                      55


<210> 65
<211> 33
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<212> PRT
<213> Caenorhabditis elegans

<400> 65
Leu Gln Glu Leu Lys Tyr Ser Phe Gln Thr Asn Asp Arg Leu Cys Phe
 1   5   10   15
Val Met Glu Phe Ala Ile Gly Gly Asp Leu Tyr Tyr His Leu Asn Arg
            20   25   30
Glu

<210> 66
<211> 21
<212> PRT
<213> Caenorhabditis elegans

<400> 66
Val Val Ile Glu Gly Trp Leu His Lys Lys Gly Glu His Ile Arg Asn
 1   5   10   15
Trp Arg Pro Arg Phe
            20

<210> 67
<211> 26
<212> PRT
<213> Caenorhabditis elegans

<400> 67
Phe Ser Glu Pro Arg Ala Arg Phe Tyr Gly Ser Glu Ile Val Leu Ala
 1   5   10   15
Leu Gly Tyr Leu His Ala Asn Ser Ile Val
            20   25

<210> 68
<211> 39
<212> PRT
<213> Caenorhabditis elegans

<400> 68
Ile Arg Val Ser Phe Cys Lys Gly Phe Gly Glu Thr Tyr Ser Arg Leu
 1   5   10   15
Lys Val Val Asn Leu Pro Cys Trp Ile Glu Ile Ile Leu His Glu Pro
            20   25   30
Ala Asp Glu Tyr Asp Thr Val
            35

<210> 69
<211> 45
<212> PRT
<213> Caenorhabditis elegans

<400> 69
Ser Arg Asn Ser Lys Ser Ser Gln Ile Arg Asn Thr Val Gly Ala Gly
 1   5   10   15

Ile Gln Leu Ala Tyr Glu Asn Gly Glu Leu Trp Leu Thr Val Leu Thr
            20   25   30
Asp Gln Ile Val Phe Val Gln Cys Pro Phe Leu Asn Gln
            35   40   45

<210> 70
<211> 29
<212> PRT
<213> Caenorhabditis elegans

<400> 70
Asn Glu Met Leu Asp Pro Glu Pro Lys Tyr Pro Lys Glu Glu Lys Pro
 1   5   10   15
Trp Cys Thr Ile Phe Tyr Tyr Glu Leu Thr Val Arg Val
            20   25

<210> 71
<211> 29
<212> PRT
<213> Caenorhabditis elegans

<400> 71
Gln Leu Gly Lys Ala Phe Glu Ala Lys Val Pro Thr Ile Thr Ile Asp
 1   5   10   15
Gly Ala Thr Gly Ala Ser Asp Glu Cys Arg Met Ser Leu
            20   25

<210> 72
<211> 105
<212> PRT
<213> Caenorhabditis elegans

<400> 72
Ser Pro Asp Asp Gly Leu Leu Asp Ser Ser Glu Glu Ser Arg Arg Arg
 1   5   10   15
Gln Lys Thr Cys Arg Val Cys Gly Asp His Ala Thr Gly Tyr Asn Phe
            20   25   30
Asn Val Ile Thr Cys Glu Ser Cys Lys Ala Phe Phe Arg Arg Asn Ala
            35   40   45
Leu Arg Pro Lys Glu Phe Lys Cys Pro Tyr Ser Glu Asp Cys Glu Ile
      50   55   60
Asn Ser Val Ser Arg Arg Phe Cys Gln Lys Cys Arg Leu Arg Lys Cys
65   70   75   80
Phe Thr Val Gly Met Lys Lys Glu Trp Ile Leu Asn Glu Glu Gln Leu
                  85   90   95
Arg Arg Arg Lys Asn Ser Arg Leu Asn
               100   105

<210> 73
<211> 89
<212> PRT
<213> Caenorhabditis elegans

<400> 73

```
Leu Asp Ser Ser Glu Glu Ser Arg Arg Arg Gln Lys Thr Cys Arg Val
1               5                   10                  15
Cys Gly Asp His Ala Thr Gly Tyr Asn Phe Asn Val Ile Thr Cys Glu
            20                  25                  30
Ser Cys Lys Ala Phe Phe Arg Arg Asn Ala Leu Arg Pro Lys Glu Phe
        35                  40                  45
Lys Cys Pro Tyr Ser Glu Asp Cys Glu Ile Asn Ser Val Ser Arg Arg
    50                  55                  60
Phe Cys Gln Lys Cys Arg Leu Arg Lys Cys Phe Thr Val Gly Met Lys
65              70                  75                  80
Lys Glu Trp Ile Leu Asn Glu Glu Gln
                85


<210> 74
<211> 73
<212> PRT
<213> Caenorhabditis elegans

<400> 74
Asp Ile Met Asn Ile Met Asp Val Thr Met Arg Arg Phe Val Lys Val
1               5                   10                  15
Ala Lys Gly Val Pro Ala Phe Arg Glu Val Ser Gln Glu Gly Lys Phe
            20                  25                  30
Ser Leu Leu Lys Gly Gly Met Ile Glu Met Leu Thr Val Arg Gly Val
        35                  40                  45
Thr Arg Tyr Asp Ala Ser Thr Asn Ser Phe Lys Thr Pro Thr Ile Lys
    50                  55                  60
Gly Gln Asn Val Ser Val Asn Val Asp
65                  70


<210> 75
<211> 112
<212> PRT
<213> Caenorhabditis elegans

<400> 75
Ser Gly Ser Leu Val Asp Leu Met Ile Lys Asn Leu Thr Ala Tyr Thr
1               5                   10                  15
Gln Gly Leu Asn Glu Thr Val Lys Asn Arg Thr Ala Glu Leu Glu Lys
            20                  25                  30
Glu Gln Glu Lys Gly Asp Gln Leu Leu Met Glu Leu Leu Pro Lys Ser
        35                  40                  45
Val Ala Asn Asp Leu Lys Asn Gly Ile Ala Val Asp Pro Lys Val Tyr
    50                  55                  60
Glu Asn Ala Thr Ile Leu Tyr Ser Asp Ile Val Gly Phe Thr Ser Leu
65                  70                  75                  80
Cys Ser Gln Ser Gln Pro Met Glu Val Val Thr Leu Leu Ser Gly Met
            85                  90                  95
Tyr Gln Arg Phe Asp Leu Ile Ile Ser Gln Gln Gly Gly Tyr Lys Val
            100                 105                 110


<210> 76
<211> 107
<212> PRT
<213> Caenorhabditis elegans
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<400> 76
Met Glu Thr Ile Gly Asp Ala Tyr Cys Val Ala Ala Gly Leu Pro Val
1   5   10   15
Val Met Glu Lys Asp His Val Lys Ser Ile Cys Met Ile Ala Leu Leu
            20   25   30
Gln Arg Asp Cys Leu His His Phe Glu Ile Pro His Arg Pro Gly Thr
            35   40   45
Phe Leu Asn Cys Arg Trp Gly Phe Asn Ser Gly Pro Val Phe Ala Gly
        50   55   60
Val Ile Gly Gln Lys Ala Pro Arg Tyr Ala Cys Phe Gly Glu Ala Val
65   70   75   80
Ile Leu Ala Ser Lys Met Glu Ser Ser Gly Val Glu Asp Arg Ile Gln
                85   90   95
Met Thr Leu Ala Ser Gln Gln Leu Leu Glu Glu
            100   105

<210> 77
<211> 43
<212> PRT
<213> Caenorhabditis elegans

<400> 77
Asp Ile Leu Lys Gly Leu Glu Tyr Ile His Ala Ser Ala Ile Asp Phe
1   5   10   15
His Gly Asn Leu Thr Leu His Asn Cys Met Leu Asp Ser His Trp Ile
            20   25   30
Val Lys Leu Ser Gly Phe Gly Val Asn Arg Leu
        35   40

<210> 78
<211> 15
<212> PRT
<213> Caenorhabditis elegans

<400> 78
Asp Met Tyr Ser Phe Gly Val Ile Leu His Glu Ile Ile Leu Lys
1   5   10   15

<210> 79
<211> 67
<212> PRT
<213> Caenorhabditis elegans

<400> 79
Ala Ile Lys Ile Asn Val Asp Asp Pro Ala Ser Thr Glu Asn Leu Asn
1   5   10   15
Tyr Leu Met Glu Ala Asn Ile Met Lys Asn Phe Lys Thr Asn Phe Ile
            20   25   30
Val Gln Leu Tyr Gly Val Ile Ser Thr Val Gln Pro Ala Met Val Val
            35   40   45
Met Glu Met Met Asp Leu Gly Asn Leu Arg Asp Tyr Leu Arg Ser Lys
        50   55   60
Arg Glu Asp
65

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<210> 80
<211> 54
<212> PRT
<213> Caenorhabditis elegans

<400> 80
Val Ile Lys Lys Pro Glu Cys Cys Glu Asn Tyr Trp Tyr Lys Val Met
1   5   10   15
Lys Met Cys Trp Arg Tyr Ser Pro Arg Asp Arg Pro Thr Phe Leu Gln
            20   25   30
Leu Val His Leu Leu Ala Ala Glu Ala Ser Pro Glu Phe Arg Asp Leu
        35   40   45
Ser Phe Val Leu Thr Asp
    50

<210> 81
<211> 69
<212> PRT
<213> Caenorhabditis elegans

<400> 81
Lys Gln Asp Ser Gly Met Ala Ser Glu Leu Lys Asp Ile Phe Ala Asn
1   5   10   15
Ile His Thr Ile Thr Gly Tyr Leu Leu Val Arg Gln Ser Ser Pro Phe
            20   25   30
Ile Ser Leu Asn Met Phe Arg Asn Leu Arg Arg Ile Glu Ala Lys Ser
        35   40   45
Leu Phe Arg Asn Leu Tyr Ala Ile Thr Val Phe Glu Asn Pro Asn Leu
    50   55   60
Lys Lys Leu Phe Asp
65

<210> 82
<211> 52
<212> PRT
<213> Caenorhabditis elegans

<400> 82
Phe Pro His Leu Arg Glu Ile Thr Gly Thr Leu Leu Val Phe Glu Thr
1   5   10   15
Glu Gly Leu Val Asp Leu Arg Lys Ile Phe Pro Asn Leu Arg Val Ile
            20   25   30
Gly Gly Arg Ser Leu Ile Gln His Tyr Ala Leu Ile Ile Tyr Arg Asn
        35   40   45
Pro Asp Leu Glu
    50

<210> 83
<211> 46
<212> PRT
<213> Caenorhabditis elegans

<400> 83
Glu Ile Gly Leu Asp Lys Leu Ser Val Ile Arg Asn Gly Gly Val Arg
1   5   10   15

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Ile Ile Asp Asn Arg Lys Leu Cys Tyr Thr Lys Thr Ile Asp Trp Lys
                20   25   30
His Leu Ile Thr Ser Ser Ile Asn Asp Val Val Val Asp Asn
            35   40   45

<210> 84
<211> 36
<212> PRT
<213> Caenorhabditis elegans

<400> 84
Tyr Asn Ala Asp Asp Trp Glu Leu Arg Gln Asp Asp Val Val Leu Gly
1   5   10   15
Gln Gln Cys Gly Glu Gly Ser Phe Gly Lys Val Tyr Leu Gly Thr Gly
            20   25   30
Asn Asn Val Val
            35

<210> 85
<211> 24
<212> PRT
<213> Caenorhabditis elegans

<400> 85
Asp Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys Lys Gly
1   5   10   15
Phe Gly Glu Ala Tyr Pro Glu Arg
            20

<210> 86
<211> 13
<212> PRT
<213> Caenorhabditis elegans

<400> 86
Gly Trp Asp Trp Ile Val Ala Pro Pro Arg Tyr Asn Ala
1   5   10

<210> 87
<211> 121
<212> PRT
<213> Homo sapiens

<400> 87
Glu Val Leu Glu Asp Asn Asp Tyr Gly Arg Ala Val Asp Trp Trp Gly
1   5   10   15
Leu Gly Val Val Met Tyr Glu Met Met Cys Gly Arg Leu Pro Phe Tyr
            20   25   30
Asn Gln Asp His Glu Lys Leu Phe Glu Leu Ile Leu Met Glu Glu Ile
            35   40   45
Arg Phe Pro Arg Thr Leu Gly Pro Glu Ala Lys Ser Leu Leu Ser Gly
        50   55   60
Leu Leu Lys Lys Asp Pro Thr Gln Arg Leu Gly Gly Gly Ser Glu Asp
65   70   75   80

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Ala Lys Glu Ile Met Gln His Arg Phe Phe Ala Asn Ile Val Trp Gln
                85   90   95
Asp Val Tyr Glu Lys Lys Leu Ser Pro Pro Phe Lys Pro Gln Val Thr
            100   105   110
Ser Glu Thr Asp Thr Arg Tyr Phe Asp
            115   120

<210> 88
<211> 121
<212> PRT
<213> Caenorhabditis elegans

<400> 88
Gln Val Leu Asp Asp His Asp Tyr Gly Arg Cys Val Asp Trp Trp Gly
1   5   10   15
Val Gly Val Val Met Tyr Glu Met Met Cys Gly Arg Leu Pro Phe Tyr
            20   25   30
Ser Lys Asp His Asn Lys Leu Phe Glu Leu Ile Met Ala Gly Asp Leu
        35   40   45
Arg Phe Pro Ser Lys Leu Ser Gln Glu Ala Arg Thr Leu Leu Thr Gly
    50   55   60
Leu Leu Val Lys Asp Pro Thr Gln Arg Leu Gly Gly Gly Pro Glu Asp
65   70   75   80
Ala Leu Glu Ile Cys Arg Ala Asp Phe Phe Arg Thr Val Asp Trp Glu
                85   90   95
Ala Thr Tyr Arg Lys Glu Ile Glu Pro Pro Tyr Lys Pro Asn Val Gln
            100   105   110
Ser Glu Thr Asp Thr Ser Tyr Phe Asp
        115   120

<210> 89
<211> 66
<212> PRT
<213> Homo sapiens

<400> 89
Thr Met Asn Glu Phe Glu Tyr Leu Lys Leu Leu Gly Lys Gly Thr Phe
1   5   10   15
Gly Lys Val Ile Leu Val Lys Glu Lys Ala Thr Gly Arg Tyr Tyr Ala
            20   25   30
Met Lys Ile Leu Lys Lys Glu Val Ile Val Ala Lys Asp Glu Val Ala
        35   40   45
His Thr Leu Thr Glu Asn Arg Val Leu Gln Asn Ser Arg His Pro Phe
    50   55   60
Leu Thr
65

<210> 90
<211> 66
<212> PRT
<213> Caenorhabditis elegans

<400> 90
Thr Met Glu Asp Phe Asp Phe Leu Lys Val Leu Gly Lys Gly Thr Phe
1   5   10   15

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Gly Lys Val Ile Leu Cys Lys Glu Lys Arg Thr Gln Lys Leu Tyr Ala
            20   25   30
Ile Lys Ile Leu Lys Lys Asp Val Ile Ile Ala Arg Glu Glu Val Ala
            35   40   45
His Thr Leu Thr Glu Asn Arg Val Leu Gln Arg Cys Lys His Pro Phe
        50   55   60
Leu Thr
65

<210> 91
<211> 45
<212> PRT
<213> Homo sapiens

<400> 91
Lys Leu Glu Asn Leu Met Leu Asp Lys Asp Gly His Ile Lys Ile Thr
1   5   10   15
Asp Phe Gly Leu Cys Lys Glu Gly Ile Lys Asp Gly Ala Thr Met Lys
            20   25   30
Thr Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val
            35   40   45

<210> 92
<211> 45
<212> PRT
<213> Caenorhabditis elegans

<400> 92
Lys Leu Glu Asn Leu Leu Leu Asp Lys Asp Gly His Ile Lys Ile Ala
1   5   10   15
Asp Phe Gly Leu Cys Lys Glu Glu Ile Ser Phe Gly Asp Lys Thr Ser
            20   25   30
Thr Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val
            35   40   45

<210> 93
<211> 57
<212> PRT
<213> Homo sapiens

<400> 93
Phe Leu Thr Ala Leu Lys Tyr Ser Phe Gln Thr His Asp Arg Leu Cys
1   5   10   15
Phe Val Met Glu Tyr Ala Asn Gly Gly Glu Leu Phe Phe His Leu Ser
            20   25   30
Arg Glu Arg Val Phe Ser Glu Asp Arg Ala Arg Phe Tyr Gly Ala Glu
            35   40   45
Ile Val Ser Ala Leu Asp Tyr Leu His
        50   55

<210> 94
<211> 57
<212> PRT
<213> Caenorhabditis elegans

<400> 94
Tyr Phe Gln Glu Leu Lys Tyr Ser Phe Gln Glu Gln His Tyr Leu Cys
1   5   10   15
Phe Val Met Gln Phe Ala Asn Gly Gly Glu Leu Phe Thr His Val Arg
            20   25   30
Lys Cys Gly Thr Phe Ser Glu Pro Arg Ala Arg Phe Tyr Gly Ala Glu
        35   40   45
Ile Val Leu Ala Leu Gly Tyr Leu His
    50   55

<210> 95
<211> 59
<212> PRT
<213> Homo sapiens

<400> 95
Asn Asn Phe Ser Val Ala Gln Cys Gln Leu Met Lys Thr Glu Arg Pro
1   5   10   15
Arg Pro Asn Thr Phe Ile Ile Arg Cys Leu Gln Trp Thr Thr Val Ile
            20   25   30
Glu Arg Thr Phe His Val Glu Thr Pro Glu Glu Arg Glu Glu Trp Ala
        35   40   45
Thr Ala Ile Gln Thr Val Ala Asp Gly Leu Lys
    50   55

<210> 96
<211> 59
<212> PRT
<213> Caenorhabditis elegans

<400> 96
Ser Thr Phe Ala Ile Phe Tyr Phe Gln Thr Met Leu Phe Glu Lys Pro
1   5   10   15
Arg Pro Asn Met Phe Met Val Arg Cys Leu Gln Trp Thr Thr Val Ile
            20   25   30
Glu Arg Thr Phe Tyr Ala Glu Ser Ala Glu Val Arg Gln Arg Trp Ile
        35   40   45
His Ala Ile Glu Ser Ile Ser Lys Lys Tyr Lys
    50   55

<210> 97
<211> 33
<212> PRT
<213> Homo sapiens

<400> 97
Leu Thr Ala Leu Lys Tyr Ser Phe Gln Thr His Asp Arg Leu Cys Phe
1   5   10   15
Val Met Glu Tyr Ala Asn Gly Gly Glu Leu Phe Phe His Leu Ser Arg
            20   25   30
Glu

<210> 98

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<211> 33
<212> PRT
<213> Caenorhabditis elegans

<400> 98
Leu Gln Glu Leu Lys Tyr Ser Phe Gln Thr Asn Asp Arg Leu Cys Phe
1   5   10   15
Val Met Glu Phe Ala Ile Gly Gly Asp Leu Tyr Tyr His Leu Asn Arg
            20   25   30
Glu

<210> 99
<211> 473
<212> PRT
<213> Homo sapiens

<400> 99
Met Leu Gly Thr Val Lys Met Glu Gly His Glu Thr Ser Asp Trp Asn
1   5   10   15
Ser Tyr Tyr Ala Asp Thr Gln Glu Ala Tyr Ser Ser Val Pro Val Ser
            20   25   30
Asn Met Asn Ser Gly Leu Gly Ser Met Asn Ser Met Asn Thr Tyr Met
            35   40   45
Thr Met Asn Thr Met Thr Thr Ser Gly Asn Met Thr Pro Ala Ser Phe
        50   55   60
Asn Met Ser Tyr Ala Asn Pro Ala Leu Gly Ala Gly Leu Ser Pro Gly
65   70   75   80
Ala Val Ala Gly Met Pro Gly Gly Ser Ala Gly Ala Met Asn Ser Met
                85   90   95
Thr Ala Ala Gly Val Thr Ala Met Gly Thr Ala Leu Ser Pro Ser Gly
            100   105   110
Met Gly Ala Met Gly Ala Gln Gln Ala Ala Ser Met Met Asn Gly Leu
            115   120   125
Gly Pro Tyr Ala Ala Ala Met Asn Pro Cys Met Ser Pro Met Ala Tyr
            130   135   140
Ala Pro Ser Asn Leu Gly Arg Ser Arg Ala Gly Gly Gly Gly Asp Ala
145   150   155   160
Lys Thr Phe Lys Arg Ser Tyr Pro His Ala Lys Pro Pro Tyr Ser Tyr
                165   170   175
Ile Ser Leu Ile Thr Met Ala Ile Gln Arg Ala Pro Ser Lys Met Leu
            180   185   190
Thr Leu Ser Glu Ile Tyr Gln Trp Ile Met Asp Leu Phe Pro Tyr Tyr
            195   200   205
Arg Gln Asn Gln Gln Arg Trp Gln Asn Ser Ile Arg His Ser Leu Ser
    210   215   220
Phe Asn Asp Cys Phe Val Lys Val Ala Arg Ser Pro Asp Lys Pro Gly
225   230   235   240
Lys Gly Ser Tyr Trp Thr Leu His Pro Asp Ser Gly Asn Met Phe Glu
                245   250   255
Asn Gly Cys Tyr Leu Arg Arg Gln Lys Arg Phe Lys Cys Glu Lys Gln
                260   265   270
Pro Gly Ala Gly Gly Gly Gly Ser Gly Ser Gly Gly Ser Gly Ala
            275   280   285
Lys Gly Gly Pro Glu Ser Arg Lys Asp Pro Ser Gly Ala Ser Asn Pro
    290   295   300
Ser Ala Asp Ser Pro Leu His Arg Gly Val His Gly Lys Thr Gly Gln

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305                    310                    315                    320
Leu Glu Gly Ala Pro Ala Pro Gly Pro Ala Ala Ser Pro Gln Thr Leu
                    325                    330                    335
Asp His Ser Gly Ala Thr Ala Thr Gly Gly Ala Ser Glu Leu Lys Thr
                    340                    345                    350
Pro Ala Ser Ser Thr Ala Pro Pro Ile Ser Ser Gly Pro Gly Ala Leu
                    355                    360                    365
Ala Ser Val Pro Ala Ser His Pro Ala His Gly Leu Ala Pro His Glu
                    370                    375                    380
Ser Gln Leu His Leu Lys Gly Asp Pro His Tyr Ser Phe Asn His Pro
385                    390                    395                    400
Phe Ser Ile Asn Asn Leu Met Ser Ser Ser Glu Gln Gln His Lys Leu
                    405                    410                    415
Asp Phe Lys Ala Tyr Glu Gln Ala Leu Gln Tyr Ser Pro Tyr Gly Ser
                    420                    425                    430
Thr Leu Pro Ala Ser Leu Pro Leu Gly Ser Ala Ser Val Thr Thr Arg
                    435                    440                    445
Ser Pro Ile Glu Pro Ser Ala Leu Glu Pro Ala Tyr Tyr Gln Gly Val
                    450                    455                    460
Tyr Ser Arg Pro Val Leu Asn Thr Ser
465                    470


<210> 100
<211> 347
<212> PRT
<213> Homo sapiens

<400> 100
Met Leu Gly Ser Val Lys Met Glu Ala His Asp Leu Ala Glu Trp Ser
1                    5                    10                    15
Tyr Tyr Pro Glu Ala Gly Glu Val Tyr Ser Pro Val Thr Pro Val Pro
                    20                    25                    30
Thr Met Ala Pro Leu Asn Ser Tyr Met Thr Leu Asn Pro Leu Ser Ser
                    35                    40                    45
Pro Tyr Pro Gly Gly Leu Pro Ala Ser Pro Leu Pro Ser Gly Pro Leu
                    50                    55                    60
Ala Pro Pro Ala Pro Ala Ala Pro Leu Gly Pro Thr Phe Pro Gly Leu
65                    70                    75                    80
Gly Leu Ser Gly Gly Ser Ser Ser Ser Gly Tyr Gly Ala Pro Gly Pro
                    85                    90                    95
Gly Leu Val His Gly Lys Glu Met Pro Lys Gly Tyr Arg Ala Pro Ala
                    100                    105                    110
His Ala Lys Pro Pro Tyr Ser Tyr Ile Ser Leu Ile Thr Met Ala Ile
                    115                    120                    125
Gln Gln Ala Pro Gly Lys Val Leu Thr Leu Ser Glu Ile Tyr Gln Trp
                    130                    135                    140
Ile Met Asp Leu Phe Pro Tyr Tyr Arg Asp Asn Gln Gln Arg Trp Gln
145                    150                    155                    160
Asn Ser Ile Arg His Ser Leu Ser Phe Asn Asp Cys Phe Val Lys Val
                    165                    170                    175
Ala Arg Ser Pro Asp Lys Pro Gly Lys Gly Ser Tyr Trp Ala Leu His
                    180                    185                    190
Pro Ser Ser Gly Asn Met Phe Glu Asn Gly Cys Tyr Leu Arg Arg Gln
                    195                    200                    205
Lys Arg Phe Lys Leu Glu Glu Lys Val Lys Lys Gly Gly Ser Gly Ala
                    210                    215                    220
Ser Thr Thr Arg Asn Gly Thr Gly Ser Ala Ala Ser Thr Thr Thr Pro
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225   230   235   240
Ala Ala Thr Val Thr Ser Pro Pro Gln Pro Pro Pro Pro Ala Pro Glu
                    245
Pro Glu Ala Gln Gly Gly Glu Asp Val Gly Ala Leu Asp Cys Gly Ser
            260   265   270
Pro Ala Ser Ser Thr Pro Tyr Phe Thr Gly Leu Glu Leu Pro Gly Asp
            275   280   285
Leu Lys Leu Asp Ala Pro Tyr Asn Phe Asn His Pro Phe Ser Ile Asn
        290   295   300
Asn Leu Met Ser Glu Gln Thr Pro Ala Pro Pro Lys Leu Asp Val Gly
305   310   315   320
Phe Gly Gly Tyr Gly Ala Glu Gly Gly Glu Pro Gly Val Tyr Tyr Gln
                325   330   335
Gly Leu Tyr Ser Arg Ser Leu Leu Asn Ala Ser
            340   345

<210> 101
<211> 635
<212> PRT
<213> Caenorhabditis elegans

<400> 101
Met Met Glu Met Leu Val Asp Gln Gly Thr Asp Ala Ser Ser Ser Ala
1   5   10   15
Ser Thr Ser Thr Ser Ser Val Ser Arg Phe Gly Ala Asp Thr Phe Met
            20   25   30
Asn Thr Pro Asp Asp Val Met Met Asn Asp Asp Met Glu Pro Ile Pro
        35   40   45
Arg Asp Arg Cys Asn Thr Trp Pro Met Arg Arg Pro Gln Leu Glu Pro
    50   55   60
Pro Leu Asn Ser Ser Pro Ile Ile His Glu Gln Ile Pro Glu Glu Asp
65   70   75   80
Ala Asp Leu Tyr Gly Ser Asn Glu Gln Cys Gly Gln Leu Gly Gly Ala
            85   90   95
Ser Ser Asn Gly Ser Thr Ala Met Leu His Thr Pro Asp Gly Ser Asn
            100   105   110
Ser His Gln Thr Ser Phe Pro Ser Glu Cys Tyr Thr Trp Pro Met Gln
            115   120   125
Gln Tyr Ile Tyr Gln Glu Ser Ser Ala Thr Ile Pro His His His Leu
        130   135   140
Asn Gln His Asn Asn Pro Tyr His Pro Met His Pro His His Gln Leu
145   150   155   160
Pro His Met Gln Gln Leu Pro Gln Pro Leu Leu Asn Leu Asn Met Thr
                165   170   175
Thr Leu Thr Ser Ser Gly Ser Ser Val Ala Ser Ser Ile Gly Gly Gly
            180   185   190
Ala Gln Cys Ser Pro Cys Ala Ser Gly Ser Ser Thr Ala Ala Thr Asn
        195   200   205
Ser Ser Gln Gln Gln Gln Thr Val Gly Gln Met Leu Ala Ala Ser Val
        210   215   220
Pro Cys Ser Ser Ser Gly Met Thr Leu Gly Met Ser Leu Asn Leu Ser
225   230   235   240
Gln Gly Gly Gly Pro Met Pro Ala Lys Lys Lys Arg Cys Arg Lys Lys
                245   250   255
Pro Thr Asp Gln Leu Ala Gln Lys Lys Pro Asn Pro Trp Gly Glu Glu
            260   265   270
Ser Tyr Ser Asp Ile Ile Ala Lys Ala Leu Glu Ser Ala Pro Asp Gly

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            275                    280                    285
Arg Leu Lys Leu Asn Glu Ile Tyr Gln Trp Phe Ser Asp Asn Ile Pro
    290                    295                    300
Tyr Phe Gly Glu Arg Ser Ser Pro Glu Glu Ala Ala Gly Trp Lys Asn
305                    310                    315                    320
Ser Ile Arg His Asn Leu Ser Leu His Ser Arg Phe Met Arg Ile Gln
                325                    330                    335
Asn Glu Gly Ala Gly Lys Ser Ser Trp Trp Val Ile Asn Pro Asp Ala
                340                    345                    350
Lys Pro Gly Met Asn Pro Arg Arg Thr Arg Glu Arg Ser Asn Thr Ile
                355                    360                    365
Glu Thr Thr Thr Lys Ala Gln Leu Glu Lys Ser Arg Arg Gly Ala Lys
    370                    375                    380
Lys Arg Ile Lys Glu Arg Ala Leu Met Gly Ser Leu His Ser Thr Leu
385                    390                    395                    400
Asn Gly Asn Ser Ile Ala Gly Ser Ile Gln Thr Ile Ser His Asp Leu
                405                    410                    415
Tyr Asp Asp Asp Ser Met Gln Gly Ala Phe Asp Asn Val Pro Ser Ser
                420                    425                    430
Phe Arg Pro Arg Thr Gln Ser Asn Leu Ser Ile Pro Gly Ser Ser Ser
                435                    440                    445
Arg Val Ser Pro Ala Ile Gly Ser Asp Ile Tyr Asp Asp Leu Glu Phe
    450                    455                    460
Pro Ser Trp Val Gly Glu Ser Val Pro Ala Ile Pro Ser Asp Ile Val
465                    470                    475                    480
Asp Arg Thr Asp Gln Met Arg Ile Asp Ala Thr Thr His Ile Gly Gly
                485                    490                    495
Val Gln Ile Lys Gln Glu Ser Lys Pro Ile Lys Thr Glu Pro Ile Ala
                500                    505                    510
Pro Pro Pro Ser Tyr His Glu Leu Asn Ser Val Arg Gly Ser Cys Ala
                515                    520                    525
Gln Asn Pro Leu Leu Arg Asn Pro Ile Val Pro Ser Thr Asn Phe Lys
                530                    535                    540
Pro Met Pro Leu Pro Gly Ala Tyr Gly Asn Tyr Gln Asn Gly Gly Ile
545                    550                    555                    560
Thr Pro Ile Asn Trp Leu Ser Thr Ser Asn Ser Ser Pro Leu Pro Gly
                565                    570                    575
Ile Gln Ser Cys Gly Ile Val Ala Ala Gln His Thr Val Ala Ser Ser
                580                    585                    590
Ser Ala Leu Pro Ile Asp Leu Glu Asn Leu Thr Leu Pro Asp Gln Pro
                595                    600                    605
Leu Met Asp Thr Met Asp Val Asp Ala Leu Ile Arg His Glu Leu Ser
    610                    615                    620
Gln Ala Gly Gly Gln His Ile His Phe Asp Leu
625                    630                    635


<210> 102
<211> 501
<212> PRT
<213> Homo sapiens

<400> 102
Met Arg Ile Gln Pro Gln Lys Ala Ala Ala Ile Ile Asp Leu Asp Pro
 1               5                    10                    15
Asp Phe Glu Pro Gln Ser Arg Pro Arg Ser Cys Thr Trp Pro Leu Pro
                20                    25                    30
Arg Pro Glu Ile Ala Asn Gln Pro Ser Glu Pro Pro Glu Val Glu Pro
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              35                    40                    45
Asp Leu Gly Glu Lys Val His Thr Glu Gly Arg Ser Glu Pro Ile Leu
    50                    55                    60
Leu Pro Ser Arg Leu Ser Glu Pro Ala Gly Gly Pro Gln Pro Gly Ile
65                    70                    75                    80
Leu Gly Ala Val Thr Gly Pro Arg Lys Gly Gly Ser Arg Arg Asn Ala
                  85                    90                    95
Trp Gly Asn Gln Ser Tyr Ala Glu Phe Ile Ser Gln Ala Ile Glu Ser
              100                   105                   110
Ala Pro Glu Lys Arg Leu Thr Leu Ala Gln Ile Tyr Glu Trp Met Val
              115                   120                   125
Arg Thr Val Pro Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala
              130                   135                   140
Gly Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Lys Phe
145                   150                   155                   160
Ile Lys Val His Asn Glu Ala Thr Gly Lys Ser Ser Trp Trp Met Leu
                  165                   170                   175
Asn Pro Glu Gly Gly Lys Ser Gly Lys Ala Pro Arg Arg Arg Ala Ala
              180                   185                   190
Ser Met Asp Ser Ser Ser Lys Leu Arg Gly Arg Ser Lys Ala Pro
              195                   200                   205
Lys Lys Lys Pro Ser Val Leu Pro Ala Pro Pro Glu Gly Ala Thr Pro
    210                   215                   220
Thr Ser Pro Val Gly His Phe Ala Lys Trp Ser Gly Ser Pro Cys Ser
225                   230                   235                   240
Arg Asn Arg Glu Glu Ala Asp Met Trp Thr Thr Phe Arg Pro Arg Ser
                  245                   250                   255
Ser Ser Asn Ala Ser Ser Val Ser Thr Arg Leu Ser Pro Leu Arg Pro
                  260                   265                   270
Glu Ser Glu Val Leu Ala Glu Glu Ile Pro Ala Ser Val Ser Ser Tyr
              275                   280                   285
Ala Gly Gly Val Pro Pro Thr Leu Asn Glu Gly Leu Glu Leu Leu Asp
    290                   295                   300
Gly Leu Asn Leu Thr Ser Ser His Ser Leu Leu Ser Arg Ser Gly Leu
305                   310                   315                   320
Ser Gly Phe Ser Leu Gln His Pro Gly Val Thr Gly Pro Leu His Thr
                  325                   330                   335
Tyr Ser Ser Ser Leu Phe Ser Pro Ala Glu Gly Pro Leu Ser Ala Gly
                  340                   345                   350
Glu Gly Cys Phe Ser Ser Ser Gln Ala Leu Glu Ala Leu Leu Thr Ser
              355                   360                   365
Asp Thr Pro Pro Pro Pro Ala Asp Val Leu Met Thr Gln Val Asp Pro
    370                   375                   380
Ile Leu Ser Gln Ala Pro Thr Leu Leu Leu Leu Gly Gly Leu Pro Ser
385                   390                   395                   400
Ser Ser Lys Leu Ala Thr Gly Val Gly Leu Cys Pro Lys Pro Leu Glu
                  405                   410                   415
Ala Arg Gly Pro Ser Ser Leu Val Pro Thr Leu Ser Met Ile Ala Pro
              420                   425                   430
Pro Pro Val Met Ala Ser Ala Pro Ile Pro Lys Ala Leu Gly Thr Pro
              435                   440                   445
Val Leu Thr Pro Pro Thr Glu Ala Ala Ser Gln Asp Arg Met Pro Gln
    450                   455                   460
Asp Leu Asp Leu Asp Met Tyr Met Glu Asn Leu Glu Cys Asp Met Asp
465                   470                   475                   480
Asn Ile Ile Ser Asp Leu Met Asp Glu Gly Glu Gly Leu Asp Phe Asn
                  485                   490                   495
Phe Glu Pro Asp Pro
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500

<210> 103
<211> 366
<212> PRT
<213> Homo sapiens

<400> 103
Arg Gly Ala Ile Arg Ile Glu Lys Asn Ala Asp Leu Cys Tyr Leu Ser
 1   5   10   15
Thr Val Asp Trp Ser Leu Ile Leu Asp Ala Val Ser Asn Asn Tyr Ile
            20   25   30
Val Gly Asn Lys Pro Pro Lys Glu Cys Gly Asp Leu Cys Pro Gly Thr
            35   40   45
Met Glu Glu Lys Pro Met Cys Glu Lys Thr Thr Ile Asn Asn Glu Tyr
        50   55   60
Asn Tyr Arg Cys Trp Thr Thr Asn Arg Cys Gln Lys Met Cys Pro Ser
65   70   75   80
Thr Cys Gly Lys Arg Ala Cys Thr Glu Asn Asn Glu Cys Cys His Pro
            85   90   95
Glu Cys Leu Gly Ser Cys Ser Ala Pro Asp Asn Asp Thr Ala Cys Val
            100   105   110
Ala Cys Arg His Tyr Tyr Tyr Ala Gly Val Cys Val Pro Ala Cys Pro
            115   120   125
Pro Asn Thr Tyr Arg Phe Glu Gly Trp Arg Cys Val Asp Arg Asp Phe
        130   135   140
Cys Ala Asn Ile Leu Ser Ala Glu Ser Ser Asp Ser Glu Gly Phe Val
145   150   155   160
Ile His Asp Gly Glu Cys Met Gln Glu Cys Pro Ser Gly Phe Ile Arg
            165   170   175
Asn Gly Ser Gln Ser Met Tyr Cys Ile Pro Cys Glu Gly Pro Cys Pro
            180   185   190
Lys Val Cys Glu Glu Glu Lys Lys Thr Lys Thr Ile Asp Ser Val Thr
            195   200   205
Ser Ala Gln Met Leu Gln Gly Cys Thr Ile Phe Lys Gly Asn Leu Leu
        210   215   220
Ile Asn Ile Arg Arg Gly Asn Asn Ile Ala Ser Glu Leu Glu Asn Phe
225   230   235   240
Met Gly Leu Ile Glu Val Val Thr Gly Tyr Val Lys Ile Arg His Ser
            245   250   255
His Ala Leu Val Ser Leu Ser Phe Leu Lys Asn Leu Arg Leu Ile Leu
            260   265   270
Gly Glu Glu Gln Leu Glu Gly Asn Tyr Ser Phe Tyr Val Leu Asp Asn
            275   280   285
Gln Asn Leu Gln Gln Leu Trp Asp Trp Asp His Arg Asn Leu Thr Ile
        290   295   300
Lys Ala Gly Lys Met Tyr Phe Ala Phe Asn Pro Lys Leu Cys Val Ser
305   310   315   320
Glu Ile Tyr Arg Met Glu Glu Val Thr Gly Thr Lys Gly Arg Gln Ser
            325   330   335
Lys Gly Asp Ile Asn Thr Arg Asn Asn Gly Glu Arg Ala Ser Cys Glu
            340   345   350
Ser Asp Val Leu His Phe Thr Ser Thr Thr Thr Ser Lys Asn
            355   360   365

<210> 104

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<211> 370
<212> PRT
<213> Homo sapiens

<400> 104
Arg Gly Ser Val Arg Ile Glu Lys Asn Asn Glu Leu Cys Tyr Leu Ala
 1   5   10   15
Thr Ile Asp Trp Ser Arg Ile Leu Asp Ser Val Glu Asp Asn Tyr Ile
            20   25   30
Val Leu Asn Lys Asp Asp Asn Glu Glu Cys Gly Asp Ile Cys Pro Gly
        35   40   45
Thr Ala Lys Gly Lys Thr Asn Cys Pro Ala Thr Val Ile Asn Gly Gln
    50   55   60
Phe Val Glu Arg Cys Trp Thr His Ser His Cys Gln Lys Val Cys Pro
65   70   75   80
Thr Ile Cys Lys Ser His Gly Cys Thr Ala Glu Gly Leu Cys Cys His
                85   90   95
Ser Glu Cys Leu Gly Asn Cys Ser Gln Pro Asp Asp Pro Thr Lys Cys
               100   105   110
Val Ala Cys Arg Asn Phe Tyr Leu Asp Gly Arg Cys Val Glu Thr Cys
           115   120   125
Pro Pro Pro Tyr Tyr His Phe Gln Asp Trp Arg Cys Val Asn Phe Ser
    130   135   140
Phe Cys Gln Asp Leu His His Lys Cys Lys Asn Ser Arg Arg Gln Gly
145   150   155   160
Cys His Gln Tyr Val Ile His Asn Asn Lys Cys Ile Pro Glu Cys Pro
                165   170   175
Ser Gly Tyr Thr Met Asn Ser Ser Asn Leu Leu Cys Thr Pro Cys Leu
                180   185   190
Gly Pro Cys Pro Lys Val Cys His Leu Leu Glu Gly Glu Lys Thr Ile
            195   200   205
Asp Ser Val Thr Ser Ala Gln Glu Leu Arg Gly Cys Thr Val Ile Asn
    210   215   220
Gly Ser Leu Ile Ile Asn Ile Arg Gly Gly Asn Asn Leu Ala Ala Glu
225   230   235   240
Leu Glu Ala Asn Leu Gly Leu Ile Glu Glu Ile Ser Gly Tyr Leu Lys
            245   250   255
Ile Arg Arg Ser Tyr Ala Leu Val Ser Leu Ser Phe Phe Arg Lys Leu
            260   265   270
Arg Leu Ile Arg Gly Glu Thr Leu Glu Ile Gly Asn Tyr Ser Phe Tyr
    275   280   285
Ala Leu Asp Asn Gln Asn Leu Arg Gln Leu Trp Asp Trp Ser Lys His
    290   295   300
Asn Leu Thr Ile Thr Gln Gly Lys Leu Phe Phe His Tyr Asn Pro Lys
305   310   315   320
Leu Cys Leu Ser Glu Ile His Lys Met Glu Glu Val Ser Gly Thr Lys
            325   330   335
Gly Arg Gln Glu Arg Asn Asp Ile Ala Leu Lys Thr Asn Gly Asp Gln
            340   345   350
Ala Ser Cys Glu Asn Glu Leu Leu Lys Phe Ser Tyr Ile Arg Thr Ser
            355   360   365
Phe Asp
370

<210> 105
<211> 383
<212> PRT

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<213> Drosophila melanogaster

<400> 105

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Arg Gly Gly Val Arg Ile Glu Lys Asn His Lys Leu Cys Tyr Asp Arg
1               5                   10                  15
Thr Ile Asp Trp Leu Glu Ile Leu Ala Glu Asn Glu Ser Gln Leu Val
                20                  25                  30
Val Leu Thr Glu Asn Gly Lys Glu Lys Glu Cys Ser Leu Ser Lys Cys
            35                  40                  45
Pro Gly Glu Ile Arg Ile Glu Glu Gly His Asp Asn Thr Ala Ile Glu
        50                  55                  60
Gly Glu Leu Asn Ala Ser Cys Gln Leu His Asn Asn Arg Arg Leu Cys
65                  70                  75                  80
Trp Asn Ser Lys Leu Cys Gln Thr Lys Cys Pro Glu Lys Cys Arg Asn
                85                  90                  95
Asn Cys Ile Asp Glu His Thr Cys Cys Ser Gln Asp Cys Leu Gly Gly
            100                 105                 110
Cys Val Ile Asp Lys Asn Gly Asn Glu Ser Cys Ile Ser Cys Arg Asn
            115                 120                 125
Val Ser Phe Asn Asn Ile Cys Met Asp Ser Cys Pro Lys Gly Tyr Tyr
        130                 135                 140
Gln Phe Asp Ser Arg Cys Val Thr Ala Asn Glu Cys Ile Thr Leu Thr
145                 150                 155                 160
Lys Phe Glu Thr Asn Ser Val Tyr Ser Gly Ile Pro Tyr Asn Gly Gln
                165                 170                 175
Cys Ile Thr His Cys Pro Thr Gly Tyr Gln Lys Ser Glu Asn Lys Arg
            180                 185                 190
Met Cys Glu Pro Cys Pro Gly Gly Lys Cys Asp Lys Glu Cys Ser Ser
            195                 200                 205
Gly Leu Ile Asp Ser Leu Glu Arg Ala Arg Glu Phe His Gly Cys Thr
        210                 215                 220
Ile Ile Thr Gly Thr Glu Pro Leu Thr Ile Ser Ile Lys Arg Glu Ser
225                 230                 235                 240
Gly Ala His Val Met Asp Glu Leu Lys Tyr Gly Leu Ala Ala Val His
            245                 250                 255
Lys Ile Gln Ser Ser Leu Met Val His Leu Thr Tyr Gly Leu Lys Ser
            260                 265                 270
Leu Lys Phe Phe Gln Ser Leu Thr Glu Ile Ser Gly Asp Pro Pro Met
        275                 280                 285
Asp Ala Asp Lys Tyr Ala Leu Tyr Val Leu Asp Asn Arg Asp Leu Asp
    290                 295                 300
Glu Leu Trp Gly Pro Asn Gln Thr Val Phe Ile Arg Lys Gly Gly Val
305                 310                 315                 320
Phe Phe His Phe Asn Pro Lys Leu Cys Val Ser Thr Ile Asn Gln Leu
                325                 330                 335
Leu Pro Met Leu Ala Ser Lys Pro Lys Phe Phe Glu Lys Ser Asp Glu
        340                 345                 350
Gly Ala Asp Ser Asn Gly Asn Arg Gly Ser Cys Gly Thr Ala Val Leu
        355                 360                 365
Asn Val Thr Leu Gln Ser Val Gly Ala Asn Ser Ala Ser Leu Asn
    370                 375                 380
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<210> 106
<211> 381
<212> PRT
<213> Caenorhabditis elegans

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<400> 106

```
Asn Gly Gly Val Arg Ile Ile Asp Asn Arg Lys Leu Cys Tyr Thr Lys
 1               5                  10                  15
Thr Ile Asp Trp Lys His Leu Ile Thr Ser Ser Ile Asn Asp Val Val
            20                  25                  30
Val Asp Asn Ala Ala Glu Tyr Ala Val Thr Glu Thr Gly Leu Met Cys
            35                  40                  45
Pro Arg Gly Ala Cys Glu Glu Asp Lys Gly Glu Ser Lys Cys His Tyr
        50                  55                  60
Leu Glu Glu Lys Asn Gln Glu Gln Gly Val Glu Arg Val Gln Ser Cys
65                  70                  75                  80
Trp Ser Asn Thr Thr Cys Gln Lys Ser Cys Ala Tyr Asp Arg Leu Leu
                85                  90                  95
Pro Thr Lys Glu Ile Gly Pro Gly Cys Asp Ala Asn Gly Asp Arg Cys
            100                 105                 110
His Asp Gln Cys Val Gly Gly Cys Glu Arg Val Asn Asp Ala Thr Ala
            115                 120                 125
Cys His Ala Cys Lys Asn Val Tyr His Lys Gly Lys Cys Ile Glu Lys
    130                 135                 140
Cys Asp Ala His Leu Tyr Leu Leu Leu Gln Arg Arg Cys Val Thr Arg
145                 150                 155                 160
Glu Gln Cys Leu Gln Leu Asn Pro Val Leu Ser Asn Lys Thr Val Pro
                165                 170                 175
Ile Lys Ala Thr Ala Gly Leu Cys Ser Asp Lys Cys Pro Asp Gly Tyr
            180                 185                 190
Gln Ile Asn Pro Asp Asp His Arg Glu Cys Arg Lys Cys Val Gly Lys
            195                 200                 205
Cys Glu Ile Val Cys Glu Ile Asn His Val Ile Asp Thr Phe Pro Lys
    210                 215                 220
Ala Gln Ala Ile Arg Leu Cys Asn Ile Ile Asp Gly Asn Leu Thr Ile
225                 230                 235                 240
Glu Ile Arg Gly Lys Gln Asp Ser Gly Met Ala Ser Glu Leu Lys Asp
                245                 250                 255
Ile Phe Ala Asn Ile His Thr Ile Thr Gly Tyr Leu Leu Val Arg Gln
            260                 265                 270
Ser Ser Pro Phe Ile Ser Leu Asn Met Phe Arg Asn Leu Arg Arg Ile
            275                 280                 285
Glu Ala Lys Ser Leu Phe Arg Asn Leu Tyr Ala Ile Thr Val Phe Glu
    290                 295                 300
Asn Pro Asn Leu Lys Lys Leu Phe Asp Ser Thr Thr Asp Leu Thr Leu
305                 310                 315                 320
Asp Arg Gly Thr Val Ser Ile Ala Asn Asn Lys Met Leu Cys Phe Lys
                325                 330                 335
Tyr Ile Lys Gln Leu Met Ser Lys Leu Asn Ile Pro Leu Asp Pro Ile
            340                 345                 350
Asp Gln Ser Glu Gly Thr Asn Gly Glu Lys Ala Ile Cys Glu Asp Met
            355                 360                 365
Ala Ile Asn Val Ser Ile Thr Ala Val Asn Ala Asp Ser
    370                 375                 380
```

<210> 107
<211> 370
<212> PRT
<213> Homo sapiens

<400> 107
```
Ala Leu Pro Val Ala Val Leu Leu Ile Val Gly Gly Leu Val Ile Met
```

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```
   1                   5                           10                          15
Leu Tyr Val Phe His Arg Lys Arg Asn Asn Ser Arg Leu Gly Asn Gly
                20                      25                      30
Val Leu Tyr Ala Ser Val Asn Pro Glu Tyr Phe Ser Ala Ala Asp Val
            35                  40                  45
Tyr Val Pro Asp Glu Trp Glu Val Ala Arg Glu Lys Ile Thr Met Ser
        50                  55                  60
Arg Glu Leu Gly Gln Gly Ser Phe Gly Met Val Tyr Glu Gly Val Ala
65                      70                  75                      80
Lys Gly Val Val Lys Asp Glu Pro Glu Thr Arg Val Ala Ile Lys Thr
                85                  90                  95
Val Asn Glu Ala Ala Ser Met Arg Glu Arg Ile Glu Phe Leu Asn Glu
            100                 105                 110
Ala Ser Val Met Lys Glu Phe Asn Cys His His Val Val Arg Leu Leu
        115                 120                 125
Gly Val Val Ser Gln Gly Gln Pro Thr Leu Val Ile Met Glu Leu Met
        130                 135                 140
Thr Arg Gly Asp Leu Lys Ser Tyr Leu Arg Ser Leu Arg Pro Glu Met
145                 150                 155                 160
Glu Asn Asn Pro Val Leu Ala Pro Pro Ser Leu Ser Lys Met Ile Gln
                165                 170                 175
Met Ala Gly Glu Ile Ala Asp Gly Met Ala Tyr Leu Asn Ala Asn Lys
            180                 185                 190
Phe Val His Arg Asp Leu Ala Ala Arg Asn Cys Met Val Ala Glu Asp
        195                 200                 205
Phe Thr Val Lys Ile Gly Asp Phe Gly Met Thr Arg Asp Ile Tyr Glu
        210                 215                 220
Thr Asp Tyr Tyr Arg Lys Gly Gly Lys Gly Leu Leu Pro Val Arg Trp
225                 230                 235                 240
Met Ser Pro Glu Ser Leu Lys Asp Gly Val Phe Thr Thr Tyr Ser Asp
                245                 250                 255
Val Trp Ser Phe Gly Val Val Leu Trp Glu Ile Ala Thr Leu Ala Glu
            260                 265                 270
Gln Pro Tyr Gln Gly Leu Ser Asn Glu Gln Val Leu Arg Phe Val Met
            275                 280                 285
Glu Gly Gly Leu Leu Asp Lys Pro Asp Asn Cys Pro Asp Met Leu Phe
        290                 295                 300
Glu Leu Met Arg Met Cys Trp Gln Tyr Asn Pro Lys Met Arg Pro Ser
305                 310                 315                 320
Phe Leu Glu Ile Ile Ser Ser Ile Lys Glu Glu Met Glu Pro Gly Phe
            325                 330                 335
Arg Glu Val Ser Phe Tyr Tyr Ser Glu Glu Asn Lys Leu Pro Glu Pro
            340                 345                 350
Glu Glu Leu Asp Leu Glu Pro Glu Asn Met Glu Ser Val Pro Leu Asp
        355                 360                 365
Pro Ser
    370


<210> 108
<211> 374
<212> PRT
<213> Homo sapiens

<400> 108
Ile Gly Pro Leu Ile Phe Val Phe Leu Phe Ser Val Val Ile Gly Ser
 1               5                       10                      15
Ile Tyr Leu Phe Leu Arg Lys Arg Gln Pro Asp Gly Pro Leu Gly Pro
```

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```
               20                      25                      30
Leu Tyr Ala Ser Ser Asn Pro Glu Tyr Leu Ser Ala Ser Asp Val Phe
           35                      40                      45
Pro Cys Ser Val Tyr Val Pro Asp Glu Trp Glu Val Ser Arg Glu Lys
       50                      55                      60
Ile Thr Leu Leu Arg Glu Leu Gly Gln Gly Ser Phe Gly Met Val Tyr
65                      70                      75                      80
Glu Gly Asn Ala Arg Asp Ile Ile Lys Gly Glu Ala Glu Thr Arg Val
                   85                      90                      95
Ala Val Lys Thr Val Asn Glu Ser Ala Ser Leu Arg Glu Arg Ile Glu
               100                     105                     110
Phe Leu Asn Glu Ala Ser Val Met Lys Gly Phe Thr Cys His His Val
               115                     120                     125
Val Arg Leu Leu Gly Val Val Ser Lys Gly Gln Pro Thr Leu Val Val
           130                     135                     140
Met Glu Leu Met Ala His Gly Asp Leu Lys Ser Tyr Leu Arg Ser Leu
145                     150                     155                     160
Arg Pro Glu Ala Glu Asn Asn Pro Gly Arg Pro Pro Pro Thr Leu Gln
                   165                     170                     175
Glu Met Ile Gln Met Ala Ala Glu Ile Ala Asp Gly Met Ala Tyr Leu
               180                     185                     190
Asn Ala Lys Lys Phe Val His Arg Asp Leu Ala Ala Arg Asn Cys Met
           195                     200                     205
Val Ala His Asp Phe Thr Val Lys Ile Gly Asp Phe Gly Met Thr Arg
       210                     215                     220
Asp Ile Tyr Glu Thr Asp Tyr Tyr Arg Lys Gly Gly Lys Gly Leu Leu
225                     230                     235                     240
Pro Val Arg Trp Met Ala Pro Glu Ser Leu Lys Asp Gly Val Phe Thr
                   245                     250                     255
Thr Ser Ser Asp Met Trp Ser Phe Gly Val Val Leu Trp Glu Ile Thr
               260                     265                     270
Ser Leu Ala Glu Gln Pro Tyr Gln Gly Leu Ser Asn Glu Gln Val Leu
           275                     280                     285
Lys Phe Val Met Asp Gly Gly Tyr Leu Asp Gln Pro Asp Asn Cys Pro
       290                     295                     300
Glu Arg Val Thr Asp Leu Met Arg Met Cys Trp Gln Phe Asn Pro Lys
305                     310                     315                     320
Met Arg Pro Thr Phe Leu Glu Ile Val Asn Leu Leu Lys Asp Asp Leu
                   325                     330                     335
His Pro Ser Phe Pro Glu Val Ser Phe Phe His Ser Glu Glu Asn Lys
               340                     345                     350
Ala Pro Glu Ser Glu Glu Leu Glu Met Glu Phe Glu Asp Met Glu Asn
           355                     360                     365
Val Pro Leu Asp Arg Ser
       370


<210> 109
<211> 384
<212> PRT
<213> Drosophila melanogaster

<400> 109
Gly Ile Gly Leu Ala Phe Leu Ile Val Ser Leu Phe Gly Tyr Val Cys
 1               5                      10                      15
Tyr Leu His Lys Arg Lys Val Pro Ser Asn Asp Leu His Met Asn Thr
           20                      25                      30
Glu Val Asn Pro Phe Tyr Ala Ser Met Gln Tyr Ile Pro Asp Asp Trp
```

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```
                35                      40                      45
Glu Val Leu Arg Glu Asn Ile Ile Gln Leu Ala Pro Leu Gly Gln Gly
    50                      55                      60
Ser Phe Gly Met Val Tyr Glu Gly Ile Leu Lys Ser Phe Pro Pro Asn
65                      70                      75                      80
Gly Val Asp Arg Glu Cys Ala Ile Lys Thr Val Asn Glu Asn Ala Thr
                85                      90                      95
Asp Arg Glu Arg Thr Asn Phe Leu Ser Glu Ala Ser Val Met Lys Glu
                100                     105                     110
Phe Asp Thr Tyr His Val Val Arg Leu Leu Gly Val Cys Ser Arg Gly
                115                     120                     125
Gln Pro Ala Leu Val Val Met Glu Leu Met Lys Lys Gly Asp Leu Lys
        130                     135                     140
Ser Tyr Leu Arg Ala His Arg Pro Glu Glu Arg Asp Glu Ala Met Met
145                     150                     155                     160
Thr Tyr Leu Asn Arg Ile Gly Val Thr Gly Asn Val Gln Pro Pro Thr
                165                     170                     175
Tyr Gly Arg Ile Tyr Gln Met Ala Ile Glu Ile Ala Asp Gly Met Ala
                180                     185                     190
Tyr Leu Ala Ala Lys Lys Phe Val His Arg Asp Leu Ala Ala Arg Asn
        195                     200                     205
Cys Met Val Ala Asp Asp Leu Thr Val Lys Ile Gly Asp Phe Gly Met
        210                     215                     220
Thr Arg Asp Ile Tyr Glu Thr Asp Tyr Tyr Arg Lys Gly Thr Lys Gly
225                     230                     235                     240
Leu Leu Pro Val Arg Trp Met Pro Pro Glu Ser Leu Arg Asp Gly Val
                245                     250                     255
Tyr Ser Ser Ala Ser Asp Val Phe Ser Phe Gly Val Val Leu Trp Glu
                260                     265                     270
Met Ala Thr Leu Ala Ala Gln Pro Tyr Gln Gly Leu Ser Asn Glu Gln
        275                     280                     285
Val Leu Arg Tyr Val Ile Asp Gly Gly Val Met Glu Arg Pro Glu Asn
        290                     295                     300
Cys Pro Asp Phe Leu His Lys Leu Met Gln Arg Cys Trp His His Arg
305                     310                     315                     320
Ser Ser Ala Arg Pro Ser Phe Leu Asp Ile Ile Ala Tyr Leu Glu Pro
                325                     330                     335
Gln Cys Pro Asn Ser Gln Phe Lys Glu Val Ser Phe Tyr His Ser Glu
                340                     345                     350
Ala Gly Leu Gln His Arg Glu Lys Glu Arg Lys Glu Arg Asn Gln Leu
        355                     360                     365
Asp Ala Phe Ala Ala Val Pro Leu Asp Gln Asp Leu Gln Asp Arg Glu
        370                     375                     380


<210> 110
<211> 380
<212> PRT
<213> Caenorhabditis elegans

<400> 110
Gly Met Leu Leu Val Phe Leu Ile Leu Met Ser Ile Ala Gly Cys Ile
 1               5                       10                      15
Ile Tyr Tyr Tyr Ile Gln Val Arg Tyr Gly Lys Lys Val Lys Ala Leu
                20                      25                      30
Ser Asp Phe Met Gln Leu Asn Pro Glu Tyr Cys Val Asp Asn Lys Tyr
        35                      40                      45
Asn Ala Asp Asp Trp Glu Leu Arg Gln Asp Asp Val Val Leu Gly Gln
```

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```
         50                      55                      60
Gln Cys Gly Glu Gly Ser Phe Gly Lys Val Tyr Leu Gly Thr Gly Asn
65                      70                      75                      80
Asn Val Val Ser Leu Met Gly Asp Arg Phe Gly Pro Cys Ala Ile Lys
                    85                      90                      95
Ile Asn Val Asp Asp Pro Ala Ser Thr Glu Asn Leu Asn Tyr Leu Met
                    100                     105                     110
Glu Ala Asn Ile Met Lys Asn Phe Lys Thr Asn Phe Ile Val Gln Leu
                    115                     120                     125
Tyr Gly Val Ile Ser Thr Val Gln Pro Ala Met Val Val Met Glu Met
                    130                     135                     140
Met Asp Leu Gly Asn Leu Arg Asp Tyr Leu Arg Ser Lys Arg Glu Asp
145                     150                     155                     160
Glu Val Phe Asn Glu Thr Asp Cys Asn Phe Phe Asp Ile Ile Pro Arg
                    165                     170                     175
Asp Lys Phe His Glu Trp Ala Ala Gln Ile Cys Asp Gly Met Ala Tyr
                    180                     185                     190
Leu Glu Ser Leu Lys Phe Cys His Arg Asp Leu Ala Ala Arg Asn Cys
                    195                     200                     205
Met Ile Asn Arg Asp Glu Thr Val Lys Ile Gly Asp Phe Gly Met Ala
                    210                     215                     220
Arg Asp Leu Phe Tyr His Asp Tyr Tyr Lys Pro Ser Gly Lys Arg Met
225                     230                     235                     240
Met Pro Val Arg Trp Met Ser Pro Glu Ser Leu Lys Asp Gly Lys Phe
                    245                     250                     255
Asp Ser Lys Ser Asp Val Trp Ser Phe Gly Val Val Leu Tyr Glu Met
                    260                     265                     270
Val Thr Leu Gly Ala Gln Pro Tyr Ile Gly Leu Ser Asn Asp Glu Val
                    275                     280                     285
Leu Asn Tyr Ile Gly Met Ala Arg Lys Val Ile Lys Lys Pro Glu Cys
                    290                     295                     300
Cys Glu Asn Tyr Trp Tyr Lys Val Met Lys Met Cys Trp Arg Tyr Ser
305                     310                     315                     320
Pro Arg Asp Arg Pro Thr Phe Leu Gln Leu Val His Leu Leu Ala Ala
                    325                     330                     335
Glu Ala Ser Pro Glu Phe Arg Asp Leu Ser Phe Val Leu Thr Asp Asn
                    340                     345                     350
Gln Met Ile Leu Asp Asp Ser Glu Ala Leu Asp Leu Asp Asp Ile Asp
                    355                     360                     365
Asp Thr Asp Met Asn Asp Gln Val Val Glu Val Ala
370                     375                     380
```

<210> 111
<211> 103
<212> PRT
<213> Caenorhabditis elegans

<400> 111
```
Asn Ile Asp Arg Glu Phe Asp Gln Lys Ala Cys Glu Ser Leu Val Lys
1                   5                       10                      15
Lys Leu Lys Asp Lys Lys Asn Asp Leu Gln Asn Leu Ile Asp Val Val
                    20                      25                      30
Leu Ser Lys Gly Thr Lys Tyr Thr Gly Cys Ile Thr Ile Pro Arg Thr
                    35                      40                      45
Leu Asp Gly Arg Leu Gln Val His Gly Arg Lys Gly Phe Pro His Val
                    50                      55                      60
Val Tyr Gly Lys Leu Trp Arg Phe Asn Glu Met Thr Lys Asn Glu Thr
```

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65   70   75   80
Arg His Val Asp His Cys Lys His Ala Phe Glu Met Lys Ser Asp Met
                    85   90   95
Val Cys Val Asn Pro Tyr His
                100

<210> 112
<211> 104
<212> PRT
<213> Homo sapiens

<400> 112
Gly Gly Glu Ser Glu Thr Phe Ala Lys Arg Ala Ile Glu Ser Leu Val
1   5   10   15
Lys Lys Leu Lys Glu Lys Lys Asp Glu Leu Asp Ser Leu Ile Thr Ala
            20   25   30
Ile Thr Thr Asn Gly Ala His Pro Ser Lys Cys Val Thr Ile Gln Arg
        35   40   45
Thr Leu Asp Gly Arg Leu Gln Val Ala Gly Arg Lys Gly Phe Pro His
    50   55   60
Val Ile Tyr Ala Arg Leu Trp Arg Trp Pro Asp Leu His Lys Asn Glu
65   70   75   80
Leu Lys His Val Lys Tyr Cys Gln Tyr Ala Phe Asp Leu Lys Cys Asp
                85   90   95
Ser Val Cys Val Asn Pro Tyr His
                100

<210> 113
<211> 205
<212> PRT
<213> Caenorhabditis elegans

<400> 113
Ile Val Tyr Tyr Glu Lys Asn Leu Gln Ile Gly Glu Lys Lys Cys Ser
1   5   10   15
Arg Gly Asn Phe His Val Asp Gly Gly Phe Ile Cys Ser Glu Asn Arg
            20   25   30
Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro Val Ala Phe
        35   40   45
Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser Tyr Lys Lys
        50   55   60
Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro Val Phe Val
65   70   75   80
Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys Lys Asp Lys
                85   90   95
Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe Gly Phe Asn
            100   105   110
Val Ser Lys Gln Ile Ile Arg Asp Ala Leu Leu Ser Lys Gln Met Ala
            115   120   125
Thr Met Tyr Leu Gln Gly Lys Leu Thr Pro Met Asn Tyr Ile Tyr Glu
    130   135   140
Lys Lys Thr Gln Glu Glu Leu Arg Arg Glu Ala Thr Arg Thr Thr Asp
145   150   155   160
Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys Lys Gly Phe
                165   170   175
Gly Glu Ala Tyr Pro Glu Arg Pro Ser Ile His Asp Cys Pro Val Trp

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```
              180                      185                    190
Ile Glu Leu Lys Ile Asn Ile Ala Tyr Asp Phe Met Asp
        195                      200                  205


<210> 114
<211> 212
<212> PRT
<213> Homo sapiens

<400> 114
Ile Ala Tyr Phe Glu Met Asp Val Gln Val Gly Glu Thr Phe Lys Val
1               5                   10                  15
Pro Ser Ser Cys Pro Ile Val Thr Val Asp Gly Tyr Val Asp Pro Ser
            20                  25                  30
Gly Gly Asp Arg Phe Cys Leu Gly Gln Leu Ser Asn Val His Arg Thr
            35                  40                  45
Glu Ala Ile Glu Arg Ala Arg Leu His Ile Gly Lys Gly Val Gln Leu
        50                  55                  60
Glu Cys Lys Gly Glu Gly Asp Val Trp Val Arg Cys Leu Ser Asp His
65                  70                  75                  80
Ala Val Phe Val Gln Ser Tyr Tyr Leu Asp Arg Glu Ala Gly Arg Ala
                85                  90                  95
Pro Gly Asp Ala Val His Lys Ile Tyr Pro Ser Ala Tyr Ile Lys Val
            100                 105                 110
Phe Asp Leu Arg Gln Cys His Arg Gln Met Gln Gln Ala Ala Thr
            115                 120                 125
Ala Gln Ala Ala Ala Ala Ala Gln Ala Ala Ala Val Ala Gly Asn Ile
        130                 135                 140
Pro Gly Pro Gly Ser Val Gly Gly Ile Ala Pro Ala Ile Ser Leu Ser
145                 150                 155                 160
Ala Ala Ala Gly Ile Gly Val Asp Asp Leu Arg Arg Leu Cys Ile Leu
                165                 170                 175
Arg Met Ser Phe Val Lys Gly Trp Gly Pro Asp Tyr Pro Arg Gln Ser
            180                 185                 190
Ile Lys Glu Thr Pro Cys Trp Ile Glu Ile His Leu His Arg Ala Leu
            195                 200                 205
Gln Leu Leu Asp
        210
```

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